ASSESSMENT OF KINESIOPHOBIA IN MATHADI WORKERS SUFFERING FROM CHRONIC LOW BACK ACHE.

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Abstract:

Mathadi workers are Head loaders carrying a load of material on their heads or back to stack at the appropriate place. They are regularly engaged with a specific operation such as loading, unloading, stacking, carrying, weighing, measuring, or other work. Mathadi workers develop chronic low back aches because of these cumulative forces passing on the spine with excessive job demands. The fear-avoidance model (FAM) of musculoskeletal pain describes a potential process for the development of chronic pain syndromes. Hence it was necessary to find out the kinesiophobia in Mathadi workers. 40 Mathadi workers with chronic nonspecific low back pain were evaluated for kinesiophobia using the Tampa scale of kinesiophobia TSK-11. This study showed an average score of 22 points on the scale of kinesiophobia, which is considered a very low level for patients with chronic low back pain. Also, the correlation of kinesiophobia score with age, work experience, and pain intensity showed a very weak correlation which was statistically insignificant. These results are different from the previous studies as behavioural responses observed in Mathadi workers show that these workers choose to face pain, believing that the presence of pain does not justify the limitation of their functional activities.

Index Terms- Mathadi worker, kinesiophobia, chronic back pain.

I. Introduction

A Mathadi worker is a Marathi language term that denotes workers who carry the load on their head, or back to stack at appropriate places. The word " Mathadi " is a corrupt form of a derivative from the word " Matha " which means " head". These operations include loading, unloading, stacking, carrying, weighing, measuring, or tasks including work, preparatory, or incidental. (1)

A study done by Rajani Mullerpatan showed point prevalence of chronic low back pain (94% in rural and 92% in tribal) and neck pain (87% in rural and 66% in tribal) were higher than previously reported global estimates. The prevalence of chronic spine pain was highest (43% to 53%) among middle-aged people followed by young adults and then elderly people. (2) A prevalence study by Vijaya Krishnan showed 73.33% of Mathadi workers had low back pain and 40% of workers showed chronic pain. (1)

Low back pain (LBP) refers to pain and discomfort localized in the lumbosacral region, with or without radiating leg pain. The patient often shows pain between the costal margins and the inferior gluteal folds, and it is usually accompanied by painful limitation of movement. Psychosocial factors such as anxiety, fear, stress, somatization, and socioeconomic problems have negative impacts on patients with chronic low back pain. (3)

The fear avoidance model (FAM) of musculoskeletal pain described by Kori et al explains a potential process for the development of chronic pain syndromes. Kinesiophobia is one of the most extreme forms of fear of pain (kinesiophobia) due to movement or re-injury. When pain catastrophizing and fear of pain are elevated, avoidance and escape behaviors are expected, increasing the likelihood of chronic pain. The FAM has been widely studied in patients with low back aches. (4)

Ample literature is available where kinesiophobia has been assessed in the elderly population or normal individuals having chronic low back aches. As Mathadi workers are involved in heavy physical labour, they are the ones who suffer from various musculoskeletal disorders, of which low back ache is very common in them. Despite their condition, they overcome their fear of pain and continue to do their daily strenuous work, as they must earn their living. Therefore, it is necessary to assess kinesiophobia in these workers and develop strategies for prevention so that kinesiophobia does not develop in them.

This study was undertaken to evaluate kinesiophobia in Mathadi workers with chronic low back ache using the Marathi version

Tampa scale of Kinesiophobia-11 (TSK – 11). And to determine if there is an association of kinesiophobia with factors such as age, pain, duration of symptoms, and work experience.

The Tampa Scale of Kinesiophobia (TSK) is the most frequently employed measure for assessing pain-related fear in chronic back pain patients. (5) (6)Marathi version of the Tampa scale of kinesiophobia — 11 (TSK — 11), which is a shortened version of the original Tampa Scale, has been used in this study. (7) The Marathi version is reliable and valid, with psychometric characteristics similar to the original English version. (8)

II Methodology:

40 male, Mathadi workers in the age group of 21 -50 with chronic backache (more than 3 months) with minimum pain intensity score of 3 on NPRS were randomly selected with a chit system for the study. The Workers having CNS affection or any neurological disorder who underwent spine surgeries in the past and who have suffered from recent trauma/ injury to the spine were excluded. Ethical consent was obtained before the start of the study. Explanation regarding the study was given to all the subjects.

Demographic details of all the subjects like age, pain intensity (NPRS score), co-morbidities, working experience, and addictions were taken into consideration. The Marathi version of the Tampa scale of Kinesiophobia was administered to the subjects and told to mark the responses. The scoring is done as 1(strongly disagree), 2(disagree), 3(agree) and 4(strongly agree). Thus, the total TSK -11 score range from 11-44 points with higher scores indicating greater fear of pain, movement, and injury.

III Statistical Analysis and Results:

In the present study, an association of kinesiophobia with factors such as age, intensity of pain, and working experience was found in Mathadi workers using GraphPad Instat. The non-parametric data were analyzed using Spearman's Coefficient of Correlation. The following indices were used to rank the correlations (r-value): $< 0.49 =$ low; 0.50–$0.69 =$ good; $> 0.7 =$ excellent. To determine the statistical significance, p value was set as $p < 0.05$. All the data is mentioned in the form of 'Mean ± Standard deviation'

Demographic Analysis:

| Variables	Values
AGE (years)	37.12 ± 6.97
INTENSITY OF PAIN (NRS)	6 ± 0.96
WORK EXPERIENCE (months)	9.72 ± 6.201
TAMPA SCORE	22 ± 4.82
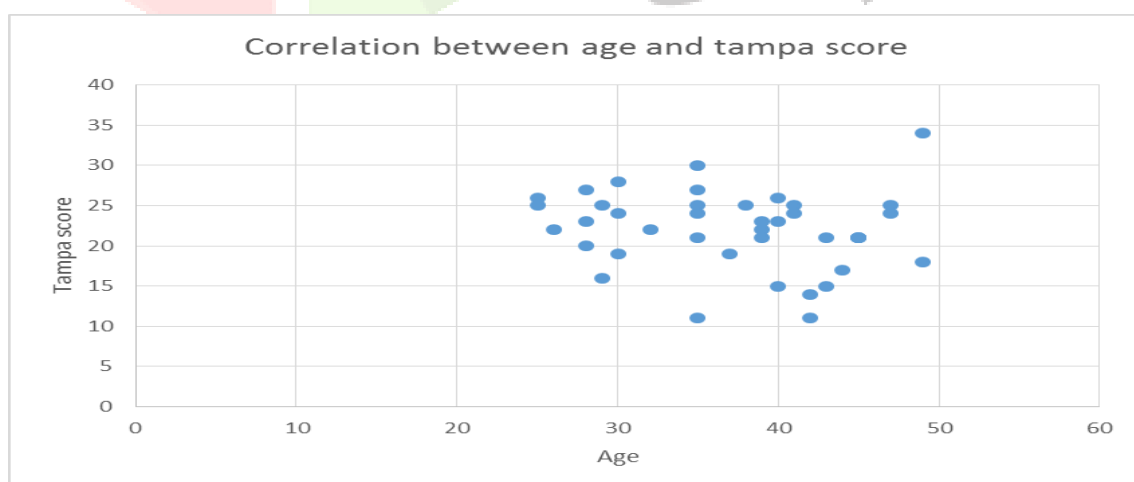
Graph1: Correlation of kinesiophobia with age

The graph shows a weak negative correlation (r=-0.23) between kinesiophobia and age which is statistically not significant (p=0.14).

Graph 2: Correlation of kinesiophobia with work experience

The graph suggests that there is a weak negative correlation(r=-0.24) between kinesiophobia and work experience. Which is statistically not significant (p = 0.12).
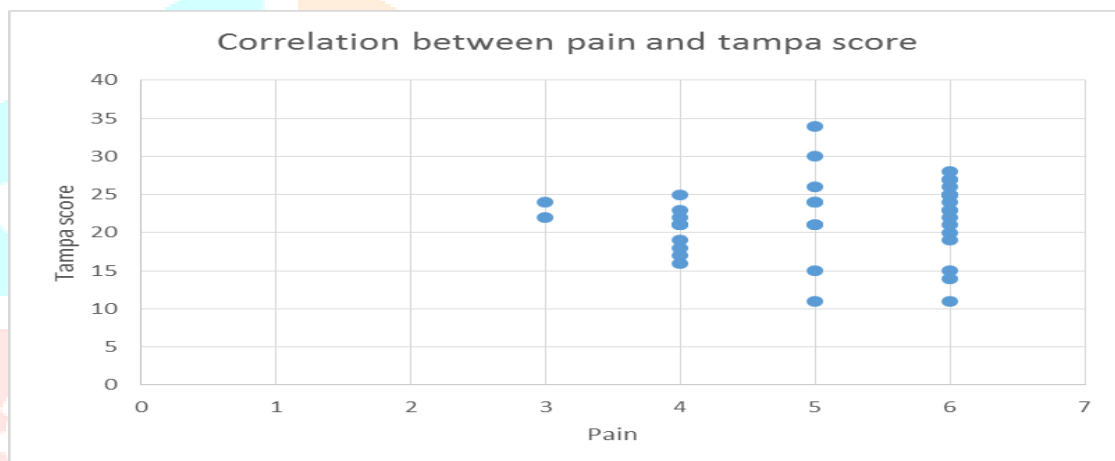
Graph3: Correlation of kinesiophobia with intensity of pain

There is a weak positive correlation (r=0.21) between kinesiophobia and the intensity of pain which is statistically not significant (p=0.17).

IV. Discussion:

The subjects of this study demonstrated weak but positive associations of kinesiophobia with pain intensity. However, there was a weak negative association with age, work experience, and duration of symptoms. Based on the previous literature found, the patients had moderate to severe levels of kinesiophobia with chronic low back pain. The patients of this study scored an average of 22 points on the scale of kinesiophobia,which is considered a very low level for patients with chronic low back pain.

Previous studies had found a significant positive correlation between kinesiophobia and pain intensity in older persons with Low back ache. (3) (9,10) The study done by Nor Azizah Ishak on Kinesiophobia, Pain, Muscle Functions, and Functional Performances among Older Persons with Low Back Pain supports the findings of the present study which shows an insignificant correlation between kinesiophobia and pain intensity. (11) The unexpected findings in our study could be due to the moderate pain level in the participants, which is 6   ± 0.96 only.

According to the biopsychosocial model, some individuals with musculoskeletal pain develop a chronic pain syndrome, the "cognitive model of fear of movement/(re)injury" suggested by Vlaeyen, which is based on fear of pain, or more specifically, the fear that physical activity may cause pain and/or recurrence of injury. Two opposing behavioural responses are postulated: 1) individuals choose to face pain in an attempt to improve, believing that the presence of pain does not justify the limitation of their functional activities, or 2) people maintain a fear of movement and believe that the activity is directly related to the presence of pain. (12) (13) (14)

In this study, it was found that these workers chose to face pain in an attempt to improve, believing that the presence of pain does not justify the limitation of theirfunctional activities. They did not show a worsening prognosis due to the fear of moving, negative thoughts, and sick leave for low back pain.

Considering the job demands of Mathadi workers it feels that age and years of experience will be significantly correlated but the present study showed an insignificant correlation between age and kinesiophobia. As these Mathadi workers start their carrier approximately at the age of 19, their years of experience and age go hand in hand. These workers develop their own working strategies to cope with cumulative stresses going on their neck and back regions. Also, the proprioceptive input is directly related to the amount of load they lift. This explains that even though they develop musculoskeletal aches and pain, compensatory strategies help them to continue their work to earn their livelihood.

V. Conclusion:

The results of the study showed that the kinesiophobia level was low, weak negative correlations existed between kinesiophobia and age, work experience, and weak positive association with pain which was statistically not significant. Even so, it is believed that the results can be useful in the scientific base of professionals involved in the clinical assessment and rehabilitation of people affected by low back pain and kinesiophobia. In the future, a study should be done to evaluate the association between kinesiophobia, disability, and quality of life in Mathadi workers with chronic low back aches to check the influence of kinesiophobia on quality of life.

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