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Research Article

Awareness of Low Back Pain in Rural Area Field Workers: A Survey

Prathamesh Santosh Kadam[1*], Dr. Mandar Malawade HOD[2]

[1](final year) Krishna College of Physiotherapy, Krishna Vishwa Vidyapeeth, Karad, Maharashtra, India.*
[2]Department of Paediatric Physiotherapy, Krishna Vishwa Vidyapeeth, Karad, Maharashtra, India

ABSTRACT:
Background: Low back pain (LBP) is a common condition characterized by stiffness, soreness, or discomfort in the lower back. It can be acute or chronic, and the severity ranges from moderate to severe. Poor lower-back posture, heavy lifting, repetitive activities in various filed work. The symptoms of LBP vary according to the underlying cause and severity of the illness. They may include dull and aching pain in the lower back, stiffness or restricted range of motion, muscle spasms, pain that worsens with movement, weakness in the lower back or legs, difficulty standing or sitting for extended periods of time and discomfort that improves with rest or a change in posture.
METHOD: An observational study was conducted with 73 participants from the local area. The study used the Oswestry Disability Index (ODI)(1) to assess individuals daily activities and pain levels. The ODI questionnaire was filled out by the participants which covers aspects of daily life and pain.
RESULT: According to the data provided by the individual, there is insufficient awareness regarding low back pain among field workers in Karad. Individuals with mild disabilities account for 67.2% of the total, while 32.8% have moderate disabilities.
Conclusion: This study shows that awareness of low back pain among field workers in Karad was inadequate. Low back pain was more common in individuals above 40 years of age.

Keywords: Low back pain (LBP), Field workers, Musculoskeletal disorders, Occupational risk factors.

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INTRODUCTION:

Any back discomfort, independent of cause, across the rib cage and the upper part of the thigh is considered low back pain, or LBP. All developed countries have a major public health concern with low back pain. While most people seem to recover from a low back pain episode rather quickly, among persons under 45 years, back pain is the most prevalent cause of disability due to activity limitation, among those between 45 and 65 years, it is second only to arthritis. LBP is a condition which often goes away entirely, if pain arrives a person can be considered to have a widespread case. This contrasts with persistent illnesses that never fade away (2) .Back pain is recognized as a work-related condition in occupational medicine due to the amount of exposure to bending, lifting, or carrying weights. Working in improper positions for extended periods of time might cause muscular discomfort and back pain syndromes(3) . Working in inappropriate postures for lengthy periods of time might create muscular discomfort and back pain syndromes. Given the physical characteristics of agriculture, one individual can handle a variety of tasks. The biomechanical elements involved in agricultural activity can differ depending on its nature. Work in agriculture is physically demanding and requires a lot of repetitive exertion. Therefore, musculoskeletal problems and work-related injuries are prevalent among farmers. Low back pain (LBP) is the most prominent musculoskeletal condition among them. It has been found that LBP results in severe physical impairment, mental health problems, and socioeconomic losses. Heavy lifting, repetitive work, poor lower back posture, and whole-body vibrations via agricultural machines are among the structural risk factors for

lower back pain (LBP). In turn, psychological difficulties include depression, worry, and tension. The prevalence of LBP rises with ageing due to ongoing work exposure and modifications in pain perception (4) . In emerging nations like India, women have a significant influence on the economics of the nation. In West Bengal's brick industry, women are integral to the brick-making process. Low back pain (LBP) is a common ailment among Female brick workers in the field in India are from low socioeconomic origins and are used to a tough physical strain and many manual activities. One of the biggest and most established sectors in India is the brick field industry, which employs millions of trained and untrained labourers across all over the nation. Labourers are required to do a variety of physically demanding tasks that might cause lower back pain (LBP). Physical risk variables, such as handling by hand, moving large loads, and work-related posture, have been linked to LBP research. High incidence of difficult postures for long periods of time, intense physical labor, and frequent contact with vibrations throughout the body in the workplace are thought to be the causes of occupational-related low back pain (LBP) among manual workers in brick manufacturing enterprises (5) .Low back WMSDs (work-related musculoskeletal disorders) are regarded as a serious public health issue in many modernised and wealthy nations. The risk of lower back pain (LBP) may increase during pruning activities due to postural restrictions. Frequent trunk bending up to ninety degrees during trimming raised the risk of lower back pain. The frequency of forward bending and the level of self-reported lower back pain (LBP) in workers, for example, by using the numeric pain rating scale (NRS). Thus, measuring pressure pain sensitivity across low back sites, provides a valid and engaging way to explore and illustrate the relationships between trunk rotation, trunk front bending, and pain sensitivity (6). This might be explained by evidence that the muscles of back, which are known to minimize pressure on passive muscles, serve to keep the spine in an upright position throughout the day while also being active during several manual tasks such as lifting and load carrying. Increased spinal mobility and lower lumbar side flexion have also been identified as factors of LBP in males in a single study. Other studies revealed no significance in spinal range of motion. Adams et al. found that a decrease of lumbar lordosis predicts LBP. Otherwise, there is minimal evidence that lumbar spine position influences the occurrence or progression of LBP.

Lifting, bending, twisting, whole body vibration, continuous sitting, physical effort, and uncomfortable back position have been identified as the primary LBP physical exposures, whereas psychosocial LBP-associated factors include job control, job demand, job satisfaction, social support, and job strain. (7) . Stress on the intervertebral discs, intervertebral joints, tendons, ligaments, nerves and lumbar back muscles around the lumbar spine causes LBP. The prevalence of LBP is linked to strenuous physical labour, repetitive trunk rotation or flexion, and standing up movements. When a patient has low back pain, their hamstrings, gluteus maximus, and lumbar erector spinae muscles all contract more during the trunk rotation action. Increased activity in the lumbar erector spinae muscle might cause a circulatory deficit inside the muscle, which would increase muscle stiffness and the likelihood of low back pain. However, LBP may also be a factor in the lumbar back muscles, especially the lumbar multifidus and erector spinae, becoming more rigid or spastic in LBP sufferers (8) .This might be explained by evidence that the back muscles, which are known to minimize pressure on passive muscles, serve to keep the spine in an upright position throughout the day while also being active during several manual tasks such as lifting and load carrying. Increased spinal mobility and lower lumbar side flexion have also been identified as factors of LBP in males in a single study. Other studies revealed no significance in spinal range of motion. Adams et al. found that a decrease of lumbar lordosis predicts LBP. Otherwise, there is minimal evidence that lumbar spine position influences the occurrence or progression of LBP (9) .It has been discovered that a decline in back muscular endurance significantly predicts the occurrence of future LBP episodes. The fact that the back muscles, that are thought to reduce the strain on passive structures, also function to keep the spine in an erect position during the day and are engaged in a variety of manual handling tasks, such as lifting and weight carrying, may help to explain this. In comparison to more upright standing and sitting positions, "passive" postures like sway standing and slump sitting cause less activation of the back muscles and transverse abdominal wall. There have been reports of particular trunk muscles that malfunction and decreased spinal proprioception in LBP groups. A loss of neutral zone position sensitivity in the lumbar spine in individuals with long-term low back pain who exhibit clinically unstable symptoms and flexion discomfort. These results could point to a loss in motor control brought on by pain and dysfunction of the muscles that stabilise the spine. This deficit could then lead to increased loading of the passive system as a result of repetitive end-range stress on the spine (10) .

METHODS

A observational study was conducted in and around Karad city over the previous six months which assessed the awareness of low back pain in field workers in rural areas. Individuals on the basis of inclusion and exclusion criteria of the condition were selected. 73 individuals around the vicinity who work in the field were chosen based on their occupation ageing from 30 years – 53 years. 29 of them are men and 44 are women, who are working as field workers for a minimum of 10 years. The statistician determined the sample size after doing a comprehensive analysis of the literature.

The Ethical Committee provided approval to perform this investigation with ethical concern.. The individuals were given MODIFIED OSWESTRY LOW BACK PAIN DISABILITY INDEX (ODI) Questionnaire to fill, to check for the awareness about low back pain. Ten questions about pain severity, personal hygiene, lifting, walking, sitting, standing, sleeping, social life, travel, and work are included in the questionnaire. The data was collected and the result was estimated. Then they were given questionnaire, everything about the topic and questionnaire was explained. The questionnaire was filled by individuals. All data was collected and with the assistance of statistician data was compiled and was analyzed and result was made.

STATASTICAL ANALYSIS AND INTERPRETATION

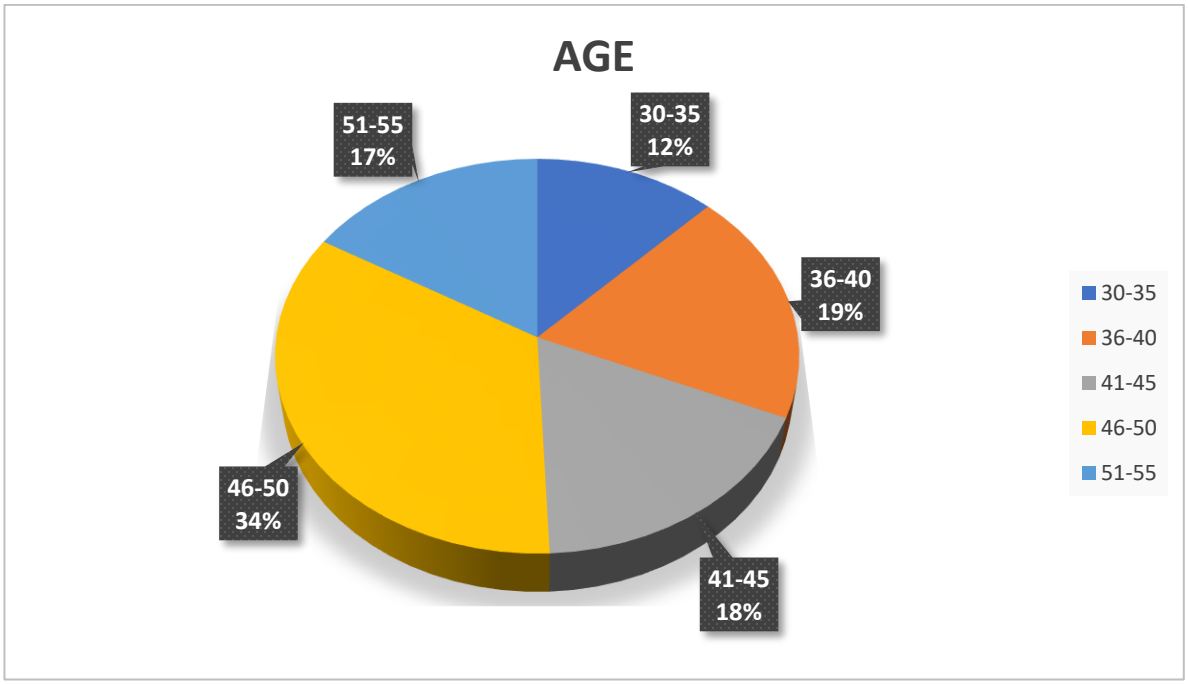
1) TABLE 1- AGE ANALYSIS CHART

Age groups	No. of individuals	Percentage
30-35	9	12%
36-40	14	19%
41-45	13	18%
46-50	25	34%
51-55	12	17%

Table 1: Distribution of participants according to age

Interpretation :

Graph 1 represents 12% of participants belongs to age group of 30 to 35 years , 19% of participants belongs to 36 to 40 years, 18% belongs to age group of 41 to 50 years , 34% of participant belongs to 46 to 50 years and 17 % belongs to age group of 51 to 55 years.

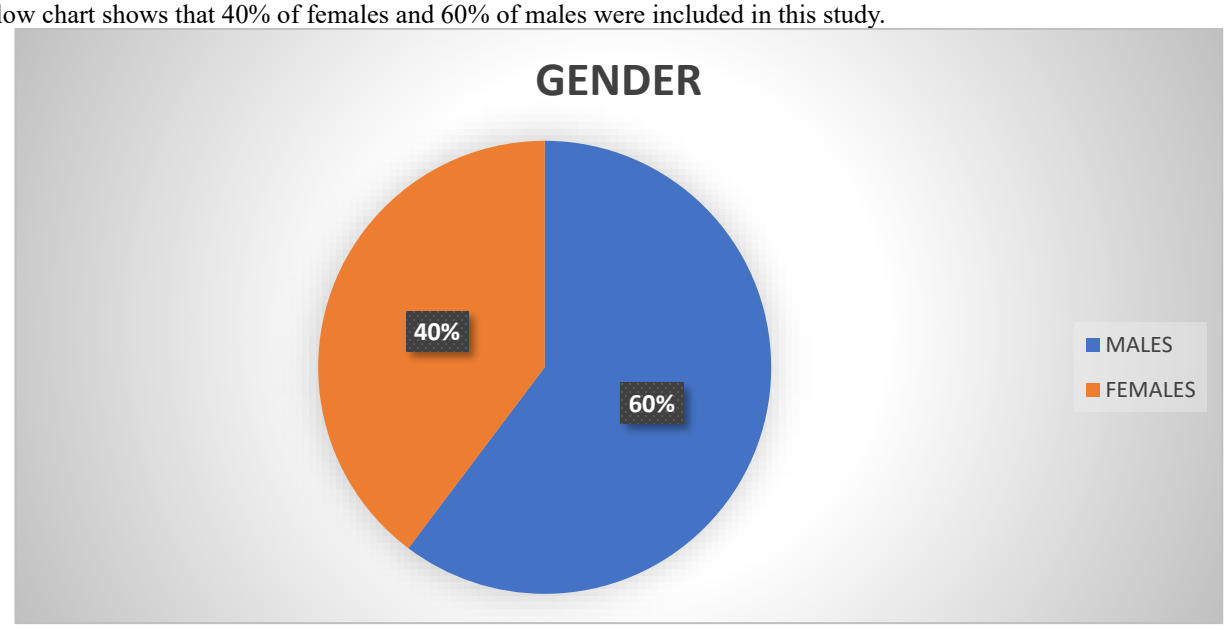


2) TABLE 2-GENDER ANALYSIS CHART

GENDER	NO.OF INDIVIDUAL	PERCENTAGE
MALE	44	60%
FEMALE	29	40%

Graph 2 : Distribution of male and female participants

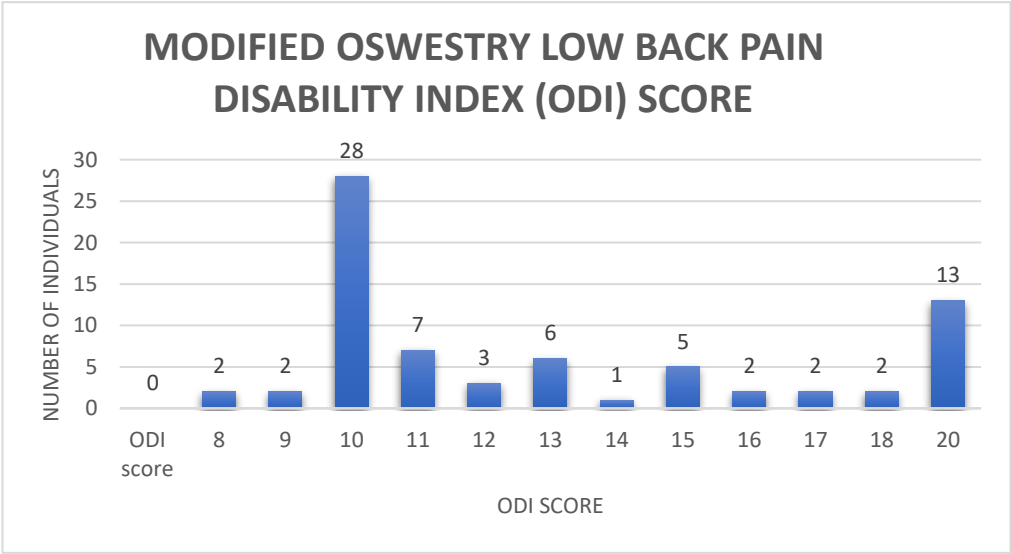
The below chart shows that 40% of females and 60% of males were included in this study.



3)-TABLE 3- MODIFIED OSWESTRY LOW BACK PAIN DISABILITY INDEX (ODI) SCORE:

ODI score	Number of individuals
8	2
9	2
10	28
11	7
12	3
13	6
14	1
15	5
16	2
17	2
18	2
20	13

The ODI score based on the inputs provided by the individuals is shown in the above table. Each question has 5 potential points, with 0 for the first answer, 1 for the second, and so on. Calculate the sum of the 10 questions and rate them on the scale.



SCORE DISABILITY LEVEL:

For 0 - 4 there is no disability, for 5 - 14 there is mild disability, for 15 - 24 there is moderate disability, for 25 - 34 there is severe disability, for 35- 50 there is completely disabled. No disability means the patient is capable of carrying out the majority of daily tasks. Typically, instruction regarding lifting, sitting, and exercising is the only recommended therapy. Mild disability means the patient suffers increased discomfort and difficulties sitting, lifting, and standing. Traveling and socializing are more difficult, and they may be unable to work. Personal care, sexual activity, and sleep are not seriously affected, and patients may often be managed conservatively. Moderate disability-Pain remains the primary issue in this group, although activities of daily life are impacted. These patients demand a thorough examination. Severe Disability-Back pain affects all elements of the patient's life. Positive intervention is needed. Completely disabled-These individuals are either bedridden or have exaggerated their health conditions. Based on the information gathered from the person and their answers, it is understood that the majority of them have mild disabilities. Based on the inputs provided by the individuals, there are 0 individuals whose score was 0-4, indicating no disability, 49 individuals whose score was 5-14, indicating mild disability, 22 individuals whose score was 15-24, indicating moderate disability, 0 individuals whose score was 25-34, indicating severe disability, and 0 individuals whose score was 35-50, indicating total disability.

Result:

73 individuals from the area were chosen based on the field worker's age range, which was 30 to 55 years old. According to the results from the data given by the individual, 67.2% individuals suffer from mild, 32.8% individuals suffer from moderate disability. 41.1% of persons had their daily activities disrupted. The above diagrams shows the number of individuals who have responded for the questionnaire in the form of google forms. The inputs varies from age to age. Based on the feedback provided by the participants, it is seen that field workers aren't enough knowledgeable of low back discomfort. As it is seen in the bar diagram the number of individual responded are more in the age group between 47years – 51years.

DISCUSSION:

An observational study was conducted to investigate the level of awareness regarding low back pain in rural field workers. Depending upon on the kind of agricultural work, the biomechanical aspects involved might vary. Agriculture work is physically hard and demands a great deal of repetition. As a result, musculoskeletal issues and work-related injuries are common among farmers. The most common of these musculoskeletal conditions is low back pain (LBP). Low back pain is defined as stiffness, soreness, or discomfort in the lower back. Pain in the back is produced by discomfort on the components surrounding the lumbar spine, such as the intervertebral disks, intervertebral joints, ligaments, nerves, and lumbar back muscles. It can be acute or chronic, and its intensity varies from moderate to severe. Two of the most significant muscles involved are the quadratus lumborum, which links the pelvis to the spine and promotes lateral flexion and stability, and the erector spinae group, which runs down the spine and helps with back extension and rotation. The gluteus maximus, latissimus dorsi, and hamstrings all contribute to support the pelvis and lower back. The objective of this study is to bring up awareness of low back discomfort among field workers such as mine workers, farmers, building site workers, and mechanics. Low back discomfort can be caused by repetitive trunk movements, weakness or stiffness of the back muscles, or repeated activity. 73 field workers in rural Karad were given the MODIFIED OSWESTRY LOW BACK PAIN DISABILITY INDEX (ODI) Questionnaire to complete in order to assess their awareness of low back pain. The questionnaire consists of 10 questions about pain severity, personal care, lifting, walking, sitting, standing, sleeping, social life, travel, and job. Then they were handed a questionnaire, and the topic and questions were well explained. The questionnaire was completed by persons. Data was collected, analyzed, and assessed with the assistance of statisticians. Based on the participants' responses, there were 0 individuals with scores of 0-4, indicating no disability, 49 with scores of 5-14, indicating mild disability, 22 with scores of 15-24, indicating moderate disability, 0 with scores of 25-34, indicating severe disability, and 0 with scores of 35-50, indicating complete disability. The individual's inputs indicate that there is insufficient awareness of low back discomfort in the Karad region. The explanation might be a lack of attention and disregard for early indicators of low back discomfort.

Conclusion:

This study understood that there is inadequate awareness regarding back discomfort in field workers such as farmers, construction workers, mining workers, laborer's, and mechanics. It is estimated on the basis of data given by the individuals of Karad in the year 2023-24. The study concluded that the awareness of low back pain in various field workers was inadequate.

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