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Work Related Musculoskeletal Symptoms among Building Construction worker in Two Cities

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ABSTRACT
Background: Work-related musculoskeletal disorders (MSDs) are an important cause of functional impairments and disability among building construction workers. Building constructions work involves structures like house, office, industry, educational center. A Construction worker tasks include clearing & preparing the site, building scaffolding, barricades bracing, operating concrete mixers, Jack hammers, saws, drills and more. This makes them susceptible toMusculoskeletal Disorders (MSDs)/ symptoms
Aim and objective: To find out the presence work related musculoskeletal symptoms two cities Patna and Muzaffarpur using Nordic musculoskeletal questionnaire.
Method: 200 workers falling in the age of 20 to 45 years were included using the convenient sampling method, with Nordic musculoskeletalquestionnaires was explained to each and every worker in their language.
Result and conclusion: Substantial number of building construction workers developed musculoskeletal symptom including neck pain, shoulder pain, upper back pain, lower backpain, leg pain, feet pain whole body fatigue.
Keywords: Building construction, work related musculoskeletal disorders**.**

I. INTRODUCTION

Building works include structures such as school, house, office, shop, malls, industries. Construction in building workers comprises of hard physical labor, under difficult condition like adverse weather conditions. And the nature of work, hours of work, low pay, poor living conditions with lack of basic amenities and separation from family, lack of job security and lack of access to proper occupational health services make the situation worse[1,2,3].

Workers who are performing heavy physical work have a significantly higher prevalence of Musculoskeletal disorders (MSDs)/symptoms in different regions of the body[4].

Workrelated Musculoskeletal Disorders: The inflammatory and degenerative conditions that affect the muscles, tendons, ligaments, joints, peripheral nerves and supporting blood vessels with consequent ache, pain or discomfort are termed as musculoskeletal disorders. Work related musculoskeletal disorders (WRMSDs) are defined as musculoskeletal disorders that results from work related events[5.]

WRMSD affect the quality of life of the construction worker by causing a lot of absenteeism, increasing work restriction and disability thus affecting the economic status of the employee. The work task demands repetitive movements, awkward postures and high force levels which expose them to greater risk of acute and cumulative WRMSD[6].

Heavy workloads lead to exertion of force, which is concentrated on the body[7,8].
Work related activities and working in awkward posture are the most frequently reported work-related activities that caused musculoskeletal symptoms among construction workers[5].

AIM AND OBJECTIVE: The study aimed to investigate the musculoskeletal symptom at different body sites among workers working in building construction.

II. METHODS

Study setting: various Building constructions sites in Patna and Muzaffarpur Cities.
Study design: Observational study.
Sample size: 200
Type of sampling: Convenient sampling

Inclusion criteria:

- Building Constructionworkers involved in labor activities.
- Working in the last 6 months or more.
- Age-22 to 45 yrs.

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Exclusion criteria: Joint deformities, Malignancy, Recent fracture, surgery, any neurological condition, Subjects not willing to participateProcedure.

The necessary permission for carrying out the study was obtained before starting the process of the study from the concerned authorities of various building sites.

The study protocol required the use of Nordic musculoskeletal questionnaire. The purpose of the study and procedure was explained to the subjects and an informed written consent was also taken. They were made clear that their responses will be kept confidential and were only be used for research purpose.Care was taken to provide sufficient time for completing the questionnaire.

The completed questionnaire was analyzed thoroughly for the responses and the responses obtained from the questionnaire were entered in Microsoft excel office professional plus sheet 2010.And data was statistically analyzed using various tool to retrieve the information about the work-related musculoskeletal problem.

III. FINDING

Musculoskeletal disorders are the commonest physical ailments among these workers with an estimated 33% prevalence in the general population and a prevalence of 77% among construction workers[10].

A study on workers of Andhra Pradesh in 2010 revealed that (20%) of the workers faced at least one musculoskeletal disorder for one month, 35(27%) workers also reported morbidity on the WHO healthy day's module in the previous month of the study. The study also highlighted that the most common health problem was back, or neck problem followed by arthritis among the workers[11].

A research also found out that the construction workers have a high risk of 50% for Musculo-skeletal injuries, higher than other industrial workers[12,13].

The repeated postural changes like bending forward or standing and weight bearing may cause backache, low back pain and neck pain and so on[12].

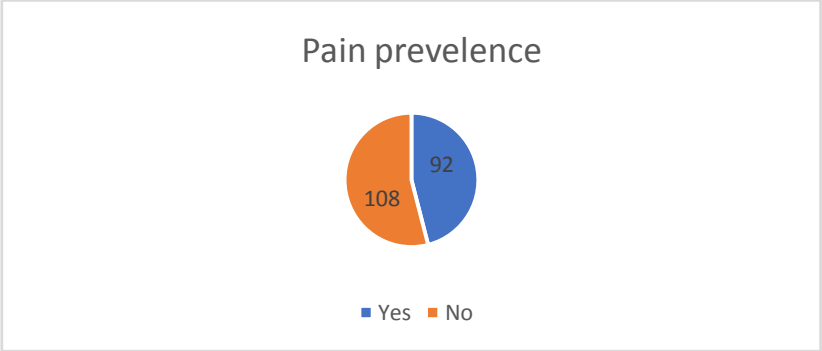
IV. STATISTICAL ANALYSIS

The data was collected through questionnaire was analyzed using MS Excel sheet and summarized descriptively. Data was presented in frequency and frequency percentage of survey response. All the analysed data was expressed in the form of graphical representation.

V. RESULT

Age	frequency	%
21-25	35	17.5
26-30	40	20
31-35	45	22.5
36-40	50	25
41-45	30	15
Total	200	100

TableI:Age Distribution of subjects



Graph-1

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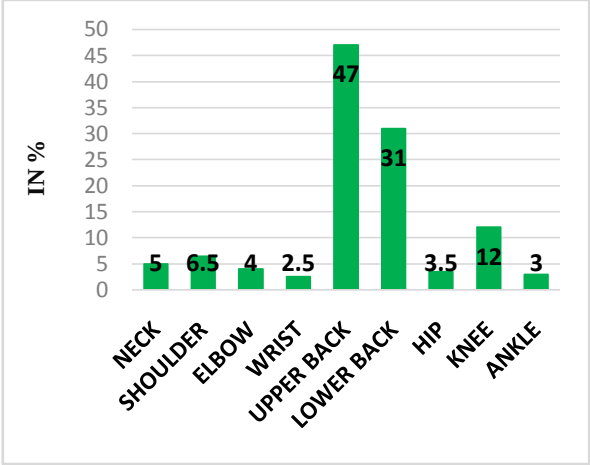
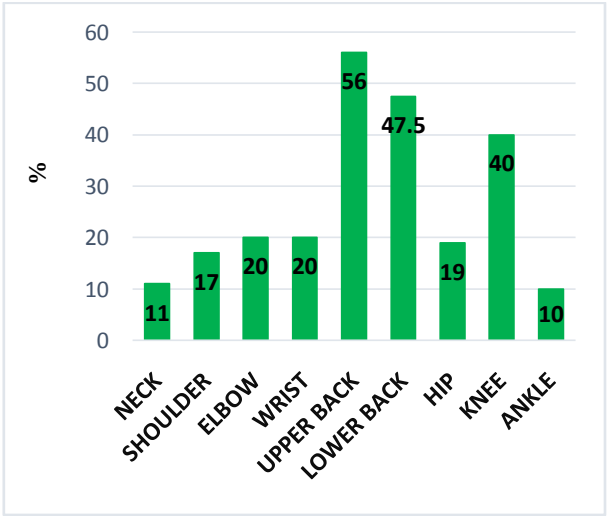
Graph 2 shows that during the last 12 months most subjects had trouble (such as ache, pain, discomfort) in upper back (47%) followed by lower back (31%), knee (12%), shoulder (6.5%),Neck((5%), elbow(4%) , Hip(3.5%), Ankle(3.5%),Wrist(2.5%)

Have you at any time during the last 12 months had trouble (Ache, pain, discomfort) in:



Graph II: Body region wise pain

Have you at any time during the last 12 months been prevented fromdoing your normal work at home or at away from home because of trouble?



Graph III: painduring last 12 months

During the last 7 days have you hadtrouble in:

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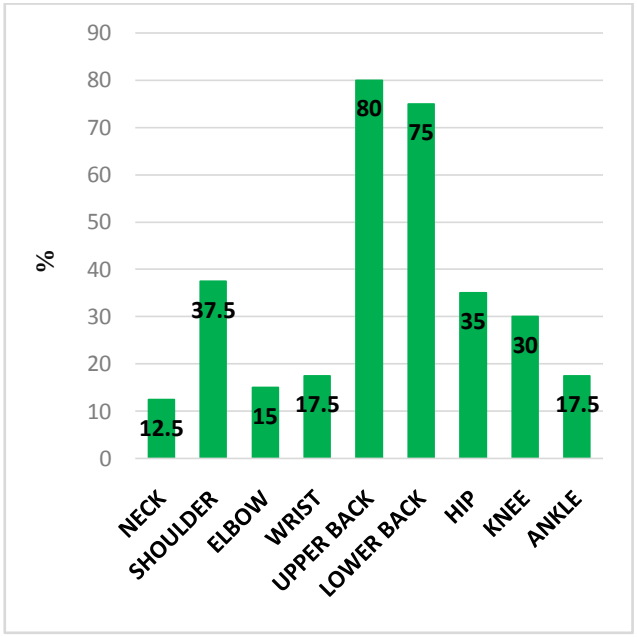

Graph IV: Pain during last 7 days

Graph 3 shows that during the last 12 months most subjects have been prevented from doing normal work because of this trouble in upper back (56%) followed by lower back (47.5 %), Knee (40%), elbow and the wrist (20% each) Hip (19%), shoulder (17%), (neck 11%) and Ankle (10%).

Graph 4 shows that during the last 7 days the subjects trouble mostly in Upper back (80%) followed by Lower back (75%), Shoulder (37.5%),Hip (35%), Knee (30%), Wrist and Ankle(17.5% each), elbow (15%)and Neck(12.5%)

VI. DISCUSSION

In building construction worker musculoskeletal disorders affects human health which leads to health problem in workers. Present study showed that there is multiple region involvement among the subjects. The most affected region was found to be upper back followed by lower back, shoulder, knee, neck. These complaints were associated with long term work duration in building construction.

Kilbom et al.[14] reported that increased frequency in repetitive work can cause discomfort and pain in the neck, shoulders, and upper extremities. It seems to attribute pain reporting to mechanical tissue overload related to repetitive movements, force requirements, and awkward postures. It is also possible that repetitive work could lead to stress symptoms and musculoskeletal pain[15].

Boschman et al.[16] reported that subjects working in building construction industry had complaints of the back, knee and shoulder / upper arm pain and most of the workers reported that their complaints are work-related.

In present study we found that musculoskeletal symptoms are common in building construction worker this is in consistence with the study of Gallagher[17],who found that building construction workers had higher risk of musculoskeletal complaints.

Yu-Sheng et al.[18] conducted a study among building construction workers and their result showed that 76.2% of the workers reported musculoskeletal complaints. Shoulder symptoms were reported as the most prevalent work-related symptoms (47.6%), neck pain was the second (43.8%), and low back pain was the third (38.1%).

There is a greater amount of compressive force on the spine and repetitive motion is responsible for the back pain. Due to prolonged stress, there is strain on muscles and ligaments which decrease their ability to support spine.[19]

Few studies, shown that psychosocial factors and stress are associated with the musculoskeletal symptoms[20.]

Awkward posture means a considerable deviation from the neutral position ofone or combination of joints (Pinzke and Kopp. 2001)[21]. These postures typicallyinclude reaching behind, twisting, wrist bending, kneeling, stooping, forward andbackward bending, and squatting. Such postures are related to injuries that areincurred during tasks that are static in nature and relatively long lasting. It alsooccurs during tasks that demand exertion of force (Westgaard and Aaras, 1984)

VII. CONCLUSION

The present study it can be concluded that workers working in building construction had higher complain of upper back pain followed by lower back pain, shoulder pain, knee pain and neck pain.

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