Prevalence of musculoskeletal pain among Restaurant Chef

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Abstract: BACKGROUND- Musculoskeletal disorders (MSD) are the second largest reason for disability globally.

Work-related musculoskeletal disorders (WRMSD) are conditions which are caused or exaggerated by work, though often other activities also aggravate the problem.

A chef’s work is characterized by long standing hours, constant forward leaning, repetitive upper body movements, lifting heavy objects and awkward postures.

Most of these tasks involve static posture and repetitive movements that can lead a chef at a risk of developing musculoskeletal disorders risk.

A full time (at least 5 days a week) restaurant chefs with at least 5 years of working experience undergo musculoskeletal disorders.

AIM - This study aimed to investigate the prevalence of musculoskeletal pain among restaurant chefs.

OBJECTIVE –

1. To determine the prevalence of musculoskeletal pain among restaurant chefs by using Brief Pain Inventory scale.
2. To determine the severity of musculoskeletal pain among restaurant chefs by using numerical pain rating scale.

METHOD – A descriptive cross-sectional study consisting of 25 restaurant chefs.

RESULTS – The frequency of presence of pain in chefs shows the highest prevalence of WMSD among chef are lower back (80%), shoulder (52%), wrist (52%), ankle (64%).

Where, 76% of participants had a moderate incidence of pain in their professional sector, whereas 12% had severe pain and 8% had mild pain.

CONCLUSION - The study concluded that the prevalence of work-related musculoskeletal disorder was majorly seen at lower back (80%) followed by ankle (64%), shoulder (52%) and wrist (52%) where the severity of pain was mild and its interference was highly noted in general activities by the chef’s.

Keywords: Restaurant chef, Musculoskeletal disorders, Pain Interference

INTRODUCTION

Musculoskeletal disorders (MSD) are the second largest reason for disability globally¹. Musculoskeletal conditions include those disorders which affect the muscles, bones, joints and associated tissues. It is typically manifested by pain activity limitations¹. Work-related musculoskeletal disorders (WRMSD) are conditions which are caused or exaggerated by work, though often other activities also aggravate the problem². WMSDs are one of the most important causes for occupational hazards which not only affects the workers efficiency and health condition but also at the same time it decreases the production rates. Several studies have also shown that some others factors such as age, education level, working experience, smoking, and alcohol consumption can also affect the musculoskeletal system of the workers. Lack of preventive measures for risk factors, prolonged working hours, poor working environment, and socioeconomic status are responsible for the poor health conditions of the workers which in turn increases the psychological stresses and leads to workplace injuries.
A chef’s work is characterized by long standing hours, constant forward leaning, repetitive upper body movements, lifting heavy objects and awkward postures.

These include grasping of cooking utensils, tossing a wok, cutting vegetables etc. all of which require the forceful exertion of the entire body.

Most of these tasks involve static posture and repetitive movements that can lead a chef at a risk of developing musculoskeletal disorders risk.

A full time (at least 5 days a week) restaurant chefs with at least 5 years of working experience undergo musculoskeletal disorders.

For example, upper limb disorders (at fingers, hands, wrists, arms, elbows, shoulders, neck) may result from repetitive or long-lasting static force exertion or may be intensified by such activity³.

For recording musculoskeletal pain we are using brief pain inventory scale. The brief pain inventory scale there are total 9 question which has been use to represent the prevalence of musculoskeletal disorder in various body part.

For pain assessment numerical pain rating scale.

The numerical pain rating scale is a psychometric response scale that can be used in questionnaires. It is a measurement instrument for subjective characteristics or attitudes that cannot be directly measured.

Therefore, this study was planned to determine the prevalence of musculoskeletal pain among restaurant chef and to assess the working posture to determine the risk of getting MSD among restaurant chef.

MATERIALS & METHODS

The study was carried out among chefs of different restaurants of Maharashtra after getting ethical approval from institutional review board. Permission for taking chefs as subjects of the study was obtained from the head of the department (HOD). Using a convenient sampling method of 25 chefs, having more than 5 years of experience, and full-time workers were selected. Neurological deficits, were not included in the study.

Detailed subjective assessment was taken including demographic data (name, age, gender, address, and working place), work experience, working hours, etc. The brief pain inventory scale (BPI) was evaluated by the interview method to check the prevalence of MSDs. Numerical pain rating scale (NPRS) was also used to analyze the severity of pain while working.

The BPI can be utilized for determining the incidence, prevalence or occurrence rates, and epidemiology of MSDs of various body regions resulted from work circumstances, conditions, and awkward postures. BPI contains various questions about pains in the entire body and body region- specific questions (neck, shoulder, elbow, wrist, upper back, lower back, hips/thighs, knees, and ankle).

Answers to these questions are recorded either in the form of yes or no. A body “map” was also utilized to simplify it for chefs to pinpoint their pain area.

RESULT

The study which was undertaken for the prevalence of musculoskeletal disorder in chefs by using Breif pain inventory and NPRS scale has yielded the following results.

The study shows 30 beauty salon workers were participated in the study which was 100% of response rate. Mean age of participants was 31.44 ±2.25 (28-36) years. The working duration of 60% of chefs who work for about 9- 10 hours a day whereas 40% worked for 11-12 hours a day. The work experience in the profession was found to be more than 4-5 years for 20% for hairdressers whereas 5.750% have been working for 1-3 years. (Table no.1)

Brief pain inventory was used to assess the musculoskeletal pain among hairdressers.

Data was interpreted as neck pain was present in 2 (8%), shoulder pain was present in 13 (52%), elbow pain was present in 1 (4%), wrist and hand pain was present in 13 (52%), upper back pain was present in 4 (16%), lower back pain was present in 20 (80%), hips pain was not present in all, knees pain was present in 5 (20%), ankle pain was present in 16 (64%).

Numerical pain rating scale (NPRS) was also taken to check the severity of pain.

Pain on rest was 19 (76%) and pain on activity was 19 (76%).

Table 1: This table presents the mean and standard deviation of age, working duration and years of experience.
(n = 25)

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<tr>
<td>Age (years)</td>
<td>31.44 ± 2.25(28-36)</td>
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<tr>
<td>Working hours</td>
<td>10.24 ± 1.16(9-12)</td>
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<tr>
<td>Years of experience</td>
<td>8.64 ± 2.53(5-14)</td>
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Graph 1: Majority of 52% of the chefs had pain around shoulder joint, 1% had pain at elbow joint and 52% had pain at wrist.

Graph 2: Majority of 80% experienced Lower Back pain and 16% experienced Upper Back pain.
DISCUSSION

In the present study, 25 subjects were taken. The age of the subjects varies from 28-36 years. The study was to find out the occurrence of musculoskeletal disorder and pain in all over body parts by using self reported questionnaire.

This study was to designed to evaluate the prevalence of the WMSDs among restaurant chef’s as WMSDs associated with repetitive and demanding working condition are the most significant challenges in them. By using a self-administered questionnaire Brief Pain Inventory in our research 25 restaurant chefs were interviewed. Our result indicate majority of the chef experienced moderate pain where the most prevalent source of discomfort has been seen at the lower back region due to prolonged standing position. The other most common body parts affected by the WMSDs included shoulder, wrist, ankle.

Based on the study, the highest prevalence of WMSD among chef are lower back (80%), shoulder (52%), wrist (52%), ankle (64%). It is similar to the other previous studies reported that the highest prevalence of WMSD among chef are lower back, shoulder, ankle except neck pain which was reported lower percentage in this study. The lower back have
the highest prevalence in this study possible due to prolonged bending of the trunk and lifting a heavy object by using more trunk effort which was also reported in previous studies.

These findings are compatible with the earlier research done by Zarafshan Nazar, Sabahat Shakeel, Armeeza Naseer and Rabia Razzaq “Prevalence of Musculoskeletal Pain among chefs working in restaurants of Sialkot” that says standing for long period of time can lead to increased muscle activity of low back and lower limb extremity and predispose to musculoskeletal pain.

Also, the research done by S Shankar et al. “Workplace factors and prevalence of low back pain among male commercial kitchen workers” also says that the long standing lead to increased muscle activity of low back and lower limb which lead to musculoskeletal pain.

And also, the research done by Dominic Tan, Thirumalaya Balaraman “working Posture and Musculoskeletal Pain among Restaurant chef” it also has same result.

Work-related musculoskeletal disorders (MSDs) often stem from prolonged exposure to risk factors that exceed the body's ability to recover. Over time, this imbalance between fatigue and recovery can lead to MSDs.

The ankle has the second high risk may be due to prolonged standing during long working hour. The shoulder and wrist pain was the 3rd highest prevalence due to repetitive movement and prolong static position of the shoulder for each position of chefs.

In our study, 76% of participants had a moderate incidence of pain in their professional sector, whereas 12% had severe pain and 8% had mild pain.

Dance, sport activity, heading to the gym, and practicing yoga asana accounted for the majority of the 92% interference with general activities and had pain interference in normal work experienced frequent aches and pains which restricted their job description. 52% difficulty in their walking abilities. The domains of mood, relationships with others, and sleep were the moderately influenced by pain interference.

Age of chefs followed by their years of working experience and long hours they spent working in standing position may be significant factor that contributes to moderate prevalence of work-related musculoskeletal disorder among them. Thus, our study demonstrated prevalence of low back pain was present in majority of the chefs seen on the body chart following which the ankle joint was the next most affected joint having moderate severity of pain. Also, our study revealed that the interference of pain was highest reported in general task by the working professionals.

CONCLUSIONS

The study concluded that the prevalence of work-related musculoskeletal disorder was majorly seen at lower back (80%) followed by ankle (64%), shoulder (52%) and wrist (52%) where the severity of pain was mild and its interference was highly noted in general activities by the chefs.

Ethical Policy and institutional review board statement: The study was approved by Institutional Review Board.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Data availability statement: Data are available based upon request from Dr. More.

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Conflict of Interest: There are no conflict of interest.

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REFERENCES


