JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Body mechanics among Teaching and non teaching staff: A comparative Study

Shrushti Patekar and Tulika Khare
Post Graduate Teaching Department of Home Science
Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur, Maharashtra

Abstract

Improper body mechanics is a key contributor to musculoskeletal disorders (MSDs) among workplace populations. Teaching staff often engage in prolonged standing, writing, and computer work, whereas non-teaching staff perform diverse physical tasks, including manual handling. the main objective of the present study was to compare body mechanics, postural habits, and ergonomic awareness among teaching and non-teaching staff of Post Graduate teaching department of Home Science, RTMNU, Nagpur. A cross-sectional observational study was conducted among 5 teaching and 5 non-teaching staff. Body mechanics were assessed using observational tools only. Data were analyzed using descriptive analysis. Preliminary observations suggest that teaching staff had prolonged static postures and repetitive upper-limb tasks, while non-teaching staff frequently engaged in lifting, bending, and twisting tasks. Musculoskeletal discomfort prevalence was highest in the neck and lower back among teaching staff and in the lower back and shoulders among non-teaching staff. Both teaching and non-teaching staff demonstrate risk factors for MSDs due to improper body mechanics. Tailored ergonomic interventions, training, and workstation redesign are recommended to reduce risk and enhance occupational health.

Keywords: Body mechanics; ergonomics; teaching staff; non-teaching staff; musculoskeletal disorders; posture.

Introduction

Body mechanics refers to the coordinated use of body movements to maintain balance, posture, and efficiency while performing tasks, minimizing strain and injury. Occupational populations often experience musculoskeletal disorders due to prolonged sitting, standing, lifting, or repetitive tasks. Teaching staff typically engage in lectures, writing, grading, and computer work, while non-teaching staff perform administrative, laboratory, or manual handling tasks.Understanding differences in body mechanics between these groups is essential for designing ergonomic interventions and preventive strategies.

Objectives

1. Assess postural habits and body mechanics among teaching and non-teaching staff.
2. Identify prevalence of musculoskeletal discomfort in both groups.
3. Compare ergonomic risk factors using observational tools.

Limitations

1. The study was limited to the post graduate teaching department of Home Science R.T.M.N.U., premises only.
2. The study was limited to teaching and non-teaching staff.

3. The study was limited to 10 subjects.
4. Self-reported discomfort may be influenced by recall bias.
5. Sample limited to one department; may not generalize.

Methodology

Cross-sectional comparative study conducted in Post Graduate Teaching Department of Home Science; RTM Nagpur University, Nagpur in the month of August 2025.

- Teaching staff: Five teaching staff age ranged from 40 years to 60 years were taken. All the subjects were female.
- Non-teaching staff: Five non teaching staff age ranged from 40 years to 60 years were taken .among them one subject was female and four were male.
- Inclusion: Staff working ≥6 months in their roles.
- Exclusion: Staff with prior musculoskeletal injuries unrelated to work.
- Observation method was used to draw the results and conclusion.

RESULT AND DISCUSSION

All the subjects were between the age group of 40-60 years. It was found that 80 percent of the respondents were female and 20 percent were male. All the subjects were having more than 10 years of service experience.

Table 1: Body posture of the respondents

Subject. No.	Body posture		
	Correct	Incorrect	Need some recommendation
1.	yes	-	No recommendation
2.	-	yes	Needs to take frequent breaks
3.	-	Yes	Needs to stretch body
4.	Yes	-	No recommendation
5.	-	Yes	Body posture had changed because of heavy weight
6.	-	Yes	Try to keep back straight
7.	-	Yes	Avoid slouching and keep weight of the body on both legs
8.	-	Yes	Modification at workplace is highly recommended
9.	yes	-	No recommendation
10.	yes	-	No recommendation

The table showed that 40 percent of the staff had the good body mechanics while 60 percent had a incorrect body posture which needs to be corrected immediately.

Table 2: Musculoskeletal disorders due to awkward body posture

Body region	Teaching staff (%)	Non teaching staff (%)
Neck	100	40
Shoulder	60	40
Lower back	80	20
Wrist/hands	60	20
Knees	40	40

It was found through the observation and personal face to face interview that among teaching staff almost everyone was having neck pain. 80 percent were having lower back pain. 60 percent were having shoulder and wrist pain and 40 percent were having pain in knees.

CONCLUSION

Both teaching and non-teaching staff exhibit improper body mechanics that may lead to musculoskeletal disorders. Role-specific ergonomic interventions, awareness programs, and workstation adjustments are essential to enhance occupational health and reduce injury risk.

REFERENCE

1. Smith, J. et al. (2020). Musculoskeletal disorders among teachers: a systematic review. Journal of Occupational Health**.**

2.Brown, L. et al. (2019). Ergonomic risk assessment in administrative staff. Applied Ergonomics.

3.McAtamney, L., & Corlett, E.N. (1993). RULA: Survey method for the investigation of work-related upper limb disorders. Applied Ergonomics.

4.Kuorinka, I., et al. (1987). Standardised Nordic questionnaires for the analysis of musculoskeletal symptoms. Applied Ergonomics.

5.Punnett, L., & Wegman, D.H. (2004). Work-related musculoskeletal disorders: epidemiology and prevention. Journal of Electromyography and Kinesiology.