

Identification of Postural Discomfort and Body Mechanics While Working from Home in Nagpur City

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Abstract:- Working from home has become a common norm since the covid-19 pandemic. Working from home has many upsides. Unlike sitting at a desk and chair for long hours, one has the liberty to change positions. Sitting in one spot can affect our blood circulation and might even fasten ageing. However, changing sitting positions is not enough. Lack of proper workstations leads to sitting in the wrong positions which might affect one's posture. The aim of the study is to identify the postural discomfort and body mechanics of the employee working from home in Nagpur City. A sample size was 100 IT professional employees and purposive sampling method was selected for the study. The study was conducted in Nagpur city. Questionnaire method was used for data collection, 21-30years to 31-40years age group were major respondents. 68% of respondents lives in nuclear family and 100% respondents were graduated and had income between 1 lac to 10 lac, in which 88% of respondents work for 5 to 10 hours per day. The null hypothesis of the study was there is no association between duration of work and type of physical ailment due to wrong posture. The data is analysed using "chi square" test. The calculated value is more than table value. Therefore the null hypothesis is rejected thus, it can be intercepted that there is an association between duration of work and type of physical ailments due to wrong working posture. It is suggested that the employee working from home should try to use ergonomic based furniture, take 5 minutes postural break everyone 1 hour and maintain their body posture while working from home.

Keyword:- Postural Discomfort, Body Mechanics, Work from home, Ergonomics.

I. INTRODUCTION

- **Postural Discomfort** – Postural dysfunction or “Poor” posture is defined as when our spine is positioned in unnatural positions, in which the curves are emphasized and this results in the joints, muscles and vertebrae being in stressful positions. This prolonged poor positioning results in a build up of pressure on these tissues.
- **Body Mechanics** – Body mechanics is a term used to describe the ways we move as we go about our daily lives. It includes how we hold our bodies when we sit, stand,

lift, carry, bend, and sleep. Poor body mechanics are often the cause of back problems.

The four components of body mechanics include posture, Base of support and centre of gravity, muscle-groups, and lifting technique.

- **Work From Home** – Remote work, also called work from home (WFH), work from anywhere, telework, remote job, mobile work, and distance work is an employment arrangement in which employees do not commute to a central place of work, such as an office building, warehouse, or retail store. Instead, work can be accomplished in the home, such as in a study, a small office/home office and/or a telecentre. A company in which all workers perform remote work
- **Musculoskeletal disorders** - Musculoskeletal impairments comprise more than 150 different diseases/conditions that affect the system and are characterized by impairments in the muscles, bones, joints and adjacent connective tissues leading to temporary or lifelong limitations in functioning and participation.

According to the Centres for Disease Control and Prevention, musculoskeletal disorders (MSDs) are injuries or disorders of the muscles, nerves, tendons, joints, cartilage, and spinal discs. However, WMSDs are conditions in which the work environment and the tasks performed at work significantly worsen the condition, especially if it persists for an extended period of time.

Ergonomics is the study of how humans interact with manmade objects. The goal of ergonomics is to create an environment that is well-suited to a user's physical needs.

While ergonomics is relevant in many areas, it is commonly applied to the workplace environment. For example, ergonomics is often used to create comfortable workstations for employees. This may involve choosing customized desks and chairs that fit each individual's body type. It may also include providing employees with ergonomic keyboards and wrist rests that provide better typing posture.

Globalization and technological progress have made telework arrangements such as Work from home (WFH) well-established in modern economies, but such work arrangements affect employee health. IT professionals suffers from different body aches and pains due to improper ergonomics in home. Therefore to reduce this postural problems there are some solution like using ergonomic based furniture, have proper working posture while working on computer, exercise and take postural break etc. So the main purpose of the study is to find problem faced by the IT professional like postural discomfort and their body mechanics while working from home and give them some management strategies to minimise their postural discomfort.

➤ *Objective*

- To identify the postural discomfort and body mechanics of the respondents.

➤ *Limitation*

- The study was limited to Nagpur city.
- The study was limited to 100 respondents only.
- The study was limited to those respondents who are working from home.

II. METHODOLOGY

- A systematic procedure was adopted for the study. The research design is the specification of method and procedure used to acquire the information needed. Research design is needed because it facilitates the smooth sailing of various research operations there by making research as efficient as possible. The questionnaire related to objective of study was prepared.
- 5 point Likert scale was used to identify the postural discomfort.
- Observation method and interview schedule was used to identify the body mechanics.

The study was experimental cum-descriptive type.

For experimental data collection some instrument was used such as:

- Pulse oxymeter
- Goniometer
- Dynamometer
- Inclinator

This instrument was used to get the physiological parameter of the respondent who is working from home since COVID time without changing their working posture for long period of time.

- Simple random sampling without replacement was used.
- For the present study survey method by preparing questionnaire was conducted.
- The data was collected from Nagpur City of Maharashtra state.

- IT professional who is presently working from home was taken as a subject.
- The purposive sampling method was used for the selection of the sampling.
- A total of 100 samples from the different area of Nagpur were taken for the present study.
- The data was collected by survey method by preparing questionnaire.
- Frequencies, percentage, pie chart, graph was applied.

III. RESULTS

In the present study 47 percent of the respondents were working in Indian Private Company and 43 percent respondents were working in multinational company. It was found that their working hours were between 8-10 hours per day. It was seen through the survey work that 67 percent of the respondents were working in shift and almost everyone was changing their working posture in every 2-4 hours. Most of them were engaged either in software development or website designing work. Almost everyone of them know about the importance of good posture and bad posture.

➤ *Task performance that require awkward head and neck position for extended period of time.*

The table shows that 12% of respondent need to work with awkward head and neck position for extended period of time.

Particular	Frequency	Percentage
Yes	12	12
No	10	10
Maybe	78	78
Total	100	100%

➤ *Task performance that require back angle to be held for extended period of time.*

The table shows that 6% of respondent have to work that require back angle to be held for extended period of time.

Particular	Frequency	Percentage
Yes	6	6
No	60	60
Maybe	34	34
Total	100	100%

➤ *Task performance with an awkward hip flexion angle for an extended period of time.*

The table shows that 10% of respondent have to perform task with an awkward hip flexion angle.

Particular	Frequency	Total
Yes	10	10
No	62	62
Maybe	28	28
Total	100	100%

➤ *Physical ailment due to adoption of continuous prolonged posture.*

The table shows that 8% of the respondents were suffering from physical ailment due to adoption of continuous prolonged posture. In which 10% were having low back injury 2% were having carpal tunnel syndrome and few have other problems. The table also shows 100% of the respondent takes break, in which 60% takes break every 2 to 4 hours and 30% takes break every more than 4 hours and very few take every one hour.

Particular	Frequency	Percentage
Yes	8	8
No	80	80
Maybe	12	12
Total	100	100%
Physical ailment		
Rotator cuff injury	2	2
Epicondylitis	0	0
Trigger finger	0	0
Muscular strain	0	0
Low back injury	10	10
Any other	8	8
Total	20	20%
Postural break		
Yes	100	100
No	0	0
Total	100	100%
Frequency of postural break		
Every 1 hour	10	10
Every 2 -4 hours	60	60
More than 4 hours	30	30
Total	100	100%

➤ *Repetitive movement*

The table shows that 47% of the respondents do the repetitive movement whereas 53% of respondent did not do any repetitive movement. The respondents who does repetitive movement in those 23% does 2 times whereas 20% respondents does 1 time repetitive movement and very few does 3 times repetitive movement.

Repetitive movement	Frequency	Percentage
Yes	47	47
No	53	53
Total	100	100%
Times		
1 time	20	20
2 times	23	23
3 times	4	4
Total	47	47%

IV. CONCLUSION

IT professional should consider good working posture. It is very important to understand about the good posture while working. In the present study 100% of the respondents had knowledge about good posture. Many of the respondents were not sure if their work performance require awkward

head and neck position or awkward hip flexion and back angle to be held for the extended period of time.

Some of the respondents were suffering from physical element due to adoption of continuous prolonged posture in which 10% were having low back injury 2% were having carpal tunnel syndrome. 47% of respondent had to do some repetitive movement which may cause discomfort to the body posture.

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