

# A Survey of Musculoskeletal Health in Information Technology Professionals

Chetana Tetgure<sup>1</sup>, Dr. Jyoti Parle<sup>2</sup>, Dr. Shweta Phadke<sup>3</sup>,  
Dr. Praniti Tilak<sup>4</sup>

<sup>1</sup>Intern, <sup>2</sup> HOD and Professor, Department of Community Physiotherapy, <sup>3</sup>Principal, <sup>4</sup> Campus Director;  
Lokmanya Tilak College of Physiotherapy Kharghar, Maharashtra University of Health Sciences, Kharghar,  
India.

Corresponding Author: Chetana Tetgure

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## ABSTRACT

**Introduction:** India has been in the forefront in cyber world with information technology (IT) industry developing into a major service provider. Long working hours on computer, Static postures, poor office ergonomics, and repetitive nature of work were identified as some of risk factors affecting musculoskeletal health of IT workers. The Musculoskeletal Health Questionnaire (MSK-HQ) is short questionnaire that allows people with musculoskeletal conditions to report their symptoms and quality of life in a standardised way. Musculoskeletal problems if ignored can become chronic debilities hence there is need to focus on improving musculoskeletal health and quality of life.

**Material:** Cross section study was done on 100 IT professionals using Musculoskeletal health Questionnaire after taking permission from ethical committee and from Oxford University Innovation. Participants were clearly and deeply informed about the procedure of the study. which includes informed consent and questionnaire.

Nature and purpose of study was explained and an informed online consent was taken from each and every subject.

Hence the objective of this study is to find musculoskeletal health among information technology professionals.

**Conclusions:** In this study the participants were more from the younger group, in which most of the participants were experiencing pain in one or more joints and they were also not aware about the musculoskeletal conditions therefore they are not taking any treatment.

This study also reported less physical activity in information technology professionals.

There is also need to spread awareness about musculoskeletal conditions and importance of physical activity

**Keywords:** Musculoskeletal health, IT professionals, work related risk factor

## INTRODUCTION

India has been in the forefront in cyber world with information technology (IT) industry developing into a major service provider. Computers are the vital tool used by these IT professionals. IT professionals are facing a group of modern occupational disease which are slowly taking their roots, this study aimed at to find out the level of quality of life in information technology professionals.<sup>(1)</sup>

Long working hours on computer, static postures, poor office ergonomics, and repetitive nature of work were identified as some of the risk factors leading affect musculoskeletal health of the workers which can ultimately affect the quality of life. These problems if ignored can become chronic debilities such as stiffness, headache, and backache. Muscles and tendons can become inflamed due to excess periods of sitting on

computer. Hence there is a need to focus on improving musculoskeletal health and quality of life. Musculoskeletal health can be improved by proper working environment, well-designed workstation and following proper postures while working.<sup>(2)</sup>

The Indian information technology contributes significantly to the economy of the country by increasing the GDP and the current project “Digital India” also help in the development of the IT sector in India. The industry has its other face which is associated with stress and strain. The nature of work in the IT sector is challenging and stressful due to targets, deadlines, work pressures, non-stop working hours, nightshifts, etc. Thus, these leads to various health problems like neck pain, back pain, repetitive strain injuries, etc due to bad sitting postures and sitting in front of computers for long hours.<sup>(3)</sup>

Quality of life (QoL) is defined as the “individuals’ perceptions of their position in life in the context of the culture and value systems in which they live and in relation. Hence QoL denotes subjective contexts of physical, psychological, cultural, social, and environmental perceptions from a holistic perspective. The MSK-HQ is a short questionnaire that allows people with musculoskeletal conditions to report their symptoms and quality of life in a standardised way. The purpose of the work was to develop holistic indicators that reflect how well services improve quality of life for people with musculoskeletal conditions. The MSK-HQ instrument is designed to be used across different musculoskeletal care pathways in different healthcare settings. (4)

## MATERIALS & METHODS

Permission was obtained from the ethics committee of the Lokmanya Medical College of Physiotherapy. We have used musculoskeletal health questionnaire by taking a permission from Oxford University Innovation.

For research data generated through Google form, and it collected from Pune. Participants

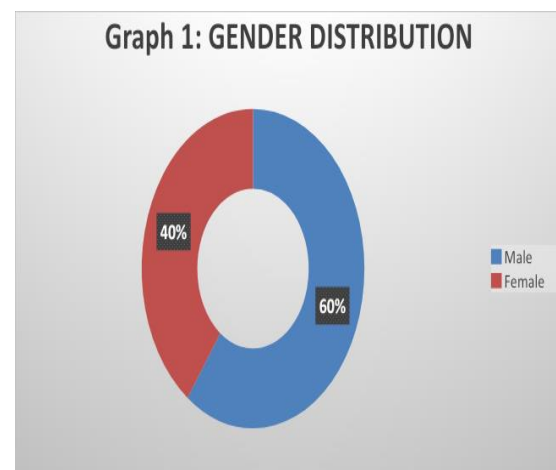
were included according to the inclusion and exclusion criteria.

Participants were clearly and deeply informed about the procedure of the study.

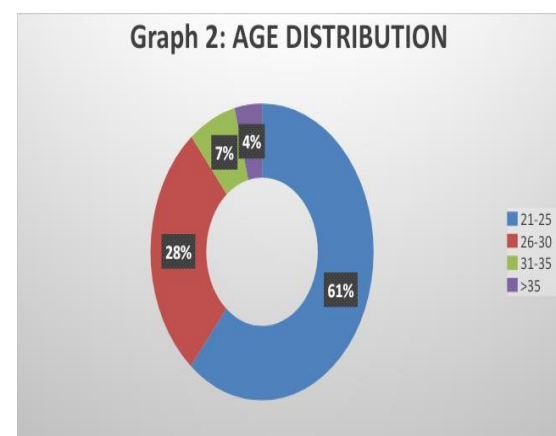
Nature and purpose of study was explained and an informed online consent was taken from each and every subject.

The questionnaire was distributed by the Google form through social networking sites (E-mail, WhatsApp, etc) which will consist of consent form, demographic data (Name, Age, Gender), data collection sheet, Versus Arthritis Musculoskeletal Health questionnaire (MSK-HQ). Participants was requested to fill the same. After data collection Descriptive statistics used to summarise, the data collected in a simple numerical form.

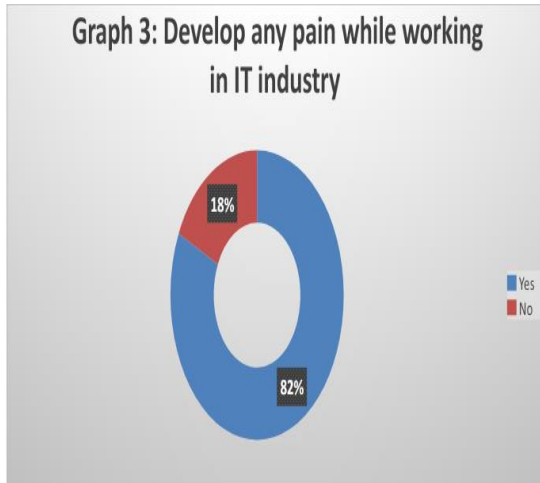
## RESULT



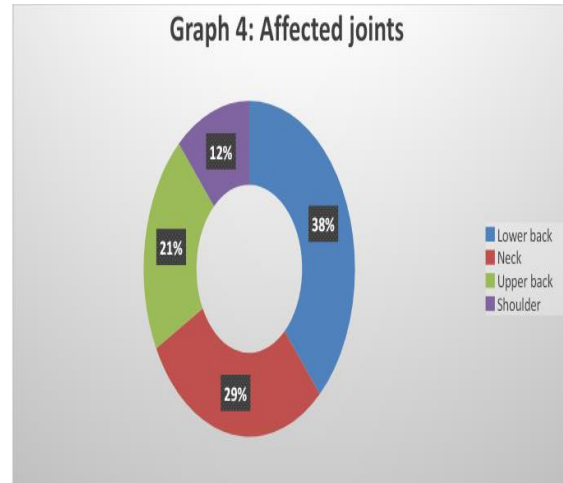
INTERPRETATION – Out of 100 participants 60% were MALE IT professionals and 40% were FEMALE IT professionals



INTERPRETATION – 61% IT professionals were in age group of 21-25, 28% were 26-30, 7% were 31-35, 4% were >35.



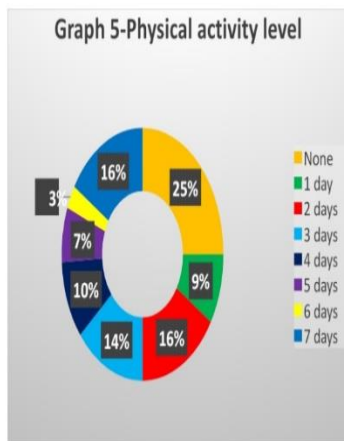
INTERPRETATION – Out of 100 participants 82% IT professionals reported develop pain while working in IT industry.



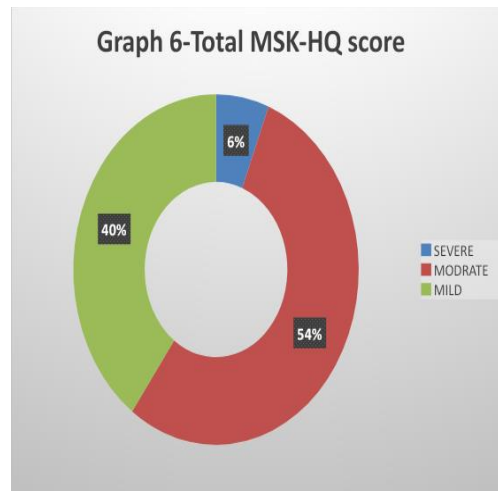
INTERPRETATION- Out of 100 participants 38% reported Lower back, 29% Neck , 21% Upper back, 12% shoulder.

Table 1: Musculoskeletal health questionnaire component

SR.NO	Domains	Not at all	Slightly	Moderately	Fairly severe	Very severe
1.	Pain/stiffness During The Day	21.2%	50.5%	26.3%	2%	-
2.	Pain/stiffness During The Night	31.3%	40.4%	26.3%	1.0%	-
3.	Symptoms Interfered With your ability to walk	47.5%	29.3%	19.2%	1%	3%
4.	Washing/dressing	55.6%	22.2%	17.2%	2%	3%
5.	Physical Activity Levels	38.4%	29.3%	26.3%	-	6.1%
6.	Work/daily Routine	27.3%	46.5%	25.3%	1%	-
7.	Social Activities And Hobbies	43.4%	36.4%	16.2%	2%	2%
8.	Needing Help	45.5%	26.3%	21.2%	3%	2%
9.	Sleep	44.4%	25.3%	25.3%	3%	1%
10.	Fatigue Or Low Energy	31.3%	34.3%	22.2%	8.1%	4%
11.	Emotional Well-being	37.4%	33.3%	21.2%	2%	6.1%
12.	Understanding Of Your Condition And any current treatment	14.1%	8.1%	33.3%	12.1%	32.3%
13.	Confidence In Being Able To Manage Your symptoms	15.2%	12.1%	33.3%	24.2%	15.2%
14.	Overall Impact	24.2%	41.4%	31.3%	-	2%



INTERPRETATION - Graph 5 shows physical activity level in IT professionals, were none (24.7%), 7 days (15.5%), 2 days (15.5%),3 days (14.4%),4 days (10.3%), 1days (9.3%) , 5days (7.2%) ,6 days (3.1%).



INTERPRETATION - Chart 6 shows that 54% participants has moderately affected musculoskeletal health followed by 6 % sever and 40 %were mild affected.

## DISCUSSION

Work related musculoskeletal disorders are disorders of the muscles, skeleton and related tissues which have been empirically shown or are suspected to have been caused by a workplace activity (particularly a repetitive activity). A disorder is work related when work procedures, equipment, or environment contribute significantly to the cause of the disorder (WHO, 1985).

Ergonomics is the science of fitting the job to the worker. Designing work stations and tools to reduce work related musculoskeletal disorders (MSDs) can help workers stay healthy and companies to reduce or eliminate the high costs associated with MSDs. (9)

Prolonged exposure to ergonomic risk factors can cause musculoskeletal disorders (MSDs). Conditions likely to cause MSD problems include: Exerting excessive force, Excessive repetition of movements that can irritate tendons and increase pressure on nerves, Awkward postures, or unsupported positions that stretch physical limits, can compress nerves and irritate tendons, Static postures, or positions that a worker must hold for long periods of time, can restrict blood flow and damage muscles, Motion, such as increased speed or acceleration when bending and twisting, can increase the amount of force exerted on the body. Compression, from grasping sharp edges like tool handles, can concentrate force on small areas of the body, reduce blood flow, nerve transmission and damage tendon sheaths. Inadequate recovery time due to overtime, lack of breaks and failure to vary tasks, leave inadequate time for tissue healing. MSDs can affect nearly all tissue in the body: nerves, tendons, tendon sheaths and muscles. The most frequently affected areas of the body are arms and the back.(9)

The present study is the documentation of the musculoskeletal health status in information technology professionals. The selective sampling method were adopted to include the samples into this study which includes: Name, age ,gender, years of working in field ,hours of working on computer develop pain while working in IT industry and

Musculoskeletal Health Questionnaire by the Arthritis Research UK Primary Care Sciences Research Centre at Keele University and the University of Oxford.

The age group of all the subjects recruited for this study range from 23-39 highest group participants were from age 21-25(N=60), in which the probability of the occurrence of degenerative changes in the joints were uncommon.

This study also reported prevalence of musculoskeletal symptoms were in lower back (38%), neck (29%), upper back(21%), shoulder(12%). Same findings were found in Kolkata based study by Kumar M, Dutta S, Saha I, Saha A, Prasanth K in 2019. MSK-HQ is scored on a range of 0-56, with higher score including better MSK-HQ health status. In this study the median is 42 hence the musculoskeletal health status in information technology professionals is moderately affected. Some participants were not aware about conditions and not taking any current treatment.

The participants have not performed any physical activity in the past week. This can be due to nature of work in the IT sector is challenging and stressful due to targets, deadlines, work pressures, non-stop working hours, nightshifts, etc.

## CONCLUSION

In this study the participants were more from the younger group, in which most of the participants were experiencing pain in one or more joints and they were also not aware about the musculoskeletal conditions therefore they are not taking any treatment.

This study also reported less physical activity in information technology professionals.

There is also need to spread awareness about musculoskeletal conditions and importance of physical activity

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**Conflict of Interest:** None

**Source of Funding:** None

**Ethical Approval:** Approved by ethics committee.

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