



"A SURVEY OF MUSCULOSKELETAL SYMPTOMS ASSOCIATED WITH WORK FROM HOME CULTURE IN COVID 19".

Physiotherapy

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ABSTRACT

Objective - A Survey of 482 Professionals between the ages of 18-65 years was conducted to understand the effects of work from home postures on the musculoskeletal system. **Design** - A Survey Study **Number of Participants** - 482, Expected Responses 500, Received 482 (96%)

Results - Descriptive Analysis of the data revealed high prevalence of musculoskeletal ache and pain especially neck and low back pain among the professionals due to the incorrect postures assumed while working from home. **Contribution of Survey:** 1. Highlight and understand the varied postures assumed while working from the comfort of our home. 2. Prevalence of musculoskeletal aches and pain while working from home.

3. Spine is the most commonly affected area concluding that postural faults can be a source of pain. 4. Scope for future study to co-relate postures and musculoskeletal pain objectively as we continue work from home.

KEYWORDS

Work from Home, Musculoskeletal pain, Neck pain, Low back Pain.

INTRODUCTION: Working from Home is currently a global scenario and also need of the hour considering the COVID 19 Pandemic. Around 90 % of world population is opting for work from home culture which might continue for a few years even post the global pandemic. Though it is the need of the hour and has many advantages like saving an individual's travel time etc, it does make an individual get accustomed to the comfortable home environment allowing them to assume relaxed postures which can sometimes prove to be deleterious for their musculoskeletal system by overburdening the spine.

Many Studies have already highlighted the increasing prevalence of laptop use which has replaced the desk computer culture at work in this decade⁽¹⁾. Desk Computers are now being replaced widely across the globe thus allowing a variety of postures while working with a portable laptop^(1,2). Laptop Postures assumed at home have a vast variance from sitting on a chair with laptop on the lap to lying on the bed with laptop while working⁽²⁾. Although this gives the pleasure of being at ease, it is already reported by Straker et.al that these changing postures puts the Musculoskeletal system under tremendous unwanted loads⁽³⁾, end result of which is bodily aches and pain with the spine bearing the utmost burnt⁽⁴⁾. The goal of conducting this survey was to shed some light on various ergonomic ways assumed while working at home and to understand the prevalence of aches and pains due to this faulty work from home postures.

METHOD: Online survey based research was conducted to understand the work from postures and prevalence of aches and pain. Survey questionnaire was prepared using Google forms and was distributed via email and whatsapp in the 2nd week of lockdown. Survey form was sent to 500 Professionals which was circulated via the human contact chain. Clear Instructions regarding the need of honest answers while filling the survey questionnaire was highlighted at the beginning of the survey. It was also mentioned that survey is applicable only to individuals between 18-65 years who are professionals with a valid qualification and are working from home. All responses collected were strictly anonymous.

First Part of the questionnaire featured general questions about individual's country of work, work profile, Age and Gender. Second part of the survey questionnaire included details of individual's working hours, total number of working hours, maximum used gadget while working from home and posture assumed for most hours while working from home. Last Part of the survey questionnaire was formulated to gather information regarding the load on Musculoskeletal system and included questions pertaining to experience of any ache or pain, Maximum pain region of the body, pain score using NRS, duration of pain prevalence and their opinion on whether the cause of ache or pain is their faulty working posture to understand the general awareness regarding posture in professionals.

DATA ANALYSIS AND RESULTS: Descriptive analysis was conducted for each question. Out of the 500 professionals approached 482 professionals participated and responded to the survey. 15 professionals did not revert back while 3 professionals did not meet the

inclusion criteria and hence responded that they could not take up the survey. Out of the 482 participants, 470 (97.5%) were working in India while 6 were placed in Australia, 5 in United States of America and 1 in Ireland. 308 (63.9%) were chartered accountants by profession, 153 (31.7%) were involved in banking sector working as assistant managers, managers and analysts and only 21 (4.35%) were into medical research work.

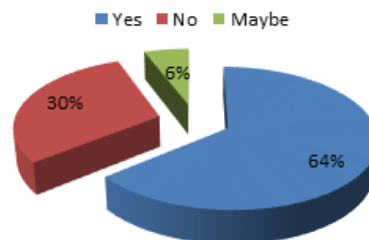
328(68%) participants were between 26-35 years whereas 147(30.4%) were between 18-25 years and only 7(1.45%) participants were between 36-45 years. This also suggests the maximum involvement of active young population in the survey. 297(61.6%) Males and 185(38.3%) females participated in the survey.

We enquired regarding the work from hours, work posture assumed for maximum hours, maximum used gadget in the second part of the survey questionnaire to which it was found that 306(63.5%) participants worked for 6 to 12 hours whereas 139(28.8%) participants worked for 1 to 5 hours and 37(7.6%) participants were working for more than 12 hours. It was also noticed that their maximum work hours were spent on laptops which accounted for 90% participants whereas only 10% participants were using a desk computer.

Survey also highlighted that maximum hours were spent sitting on a chair with laptop on lap and no desk which was reported by 288(59.75%) participants, 148(30.7%) participants worked maximum hours sitting or lying on bed whereas 29(6.01%) preferred sitting on the floor and 17(3.5%) used a desk setting to work from home.

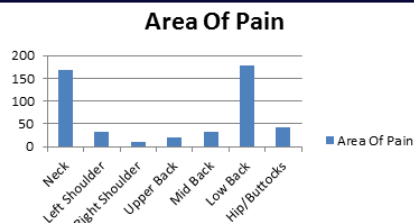
Third part of our survey enquired regarding the participants aches and pain and we found that 309(64%) participants experienced some ache and pain whereas 145(30%) were pain free and 28(5.8%) participants were not sure if they may have experienced

Aches & Pain



Any ache and pain (Graph 1).

Not to our surprise though and considering the working posture and position of maximum participants it was found that maximum ache and pain was experienced in the neck with 178(36.9%) participants reporting it whereas second most common area of ache and pain reported by 167(34.6%) participants was the low back. Ache or pain Areas are depicted in the graph below (Graph 2).



It was also noticed that 402(83.4%) participants had their pain range from 6 to 10 on NRS Scale whereas 80(16.59%) participants had their pain ranged from 0 to 5 on NRS Scale. It was reported that for 205(42.5%) participants pain lasted for many days whereas for 173(35.8%) participants pain was experienced for only a few days. Graphical representation of pain duration is depicted below to understand the chronicity of the same. Lastly 288(59.7%) participants surprisingly were aware that their pain occurred due to their faulty work from home posture but 46(9.5%) did not understand their source of pain and 148(30.7%) participants disagreed that their pain was due to a faulty working posture.

RESULT OF ANALYSIS: A total of 482 professionals were a part of this survey. Analysis reveals the following:

1. Maximum participants were active young male professionals between 18 to 35 years.
2. Maximum participants spent long hours (6 to 12 hours) sitting on a chair without desk and with laptops.
3. More than 50% participants experienced musculoskeletal ache or pain with most affected area being the neck and low back and maximum participants had their pain ranging between 6 to 10 on NRS Scale.
4. More than 50% participants were aware that their faulty working postures resulted in their musculoskeletal ache or pain.

DISCUSSION:

As seen in the analytical findings of this survey, it is worrisome that most of the active young professionals are not considering or are ignoring their work from home postures which is indeed leading to overburdening of their spine causing neck and low back pain. It has already been reported in the past literature that even small postural changes increased the load on the musculoskeletal system^(3,4). As seen in the survey most of our participants worked long hours sitting on a chair with no desk while working on the laptop which forces us to assume the worst possible postures in which they are working for long hours. This postural faults result in structural abnormalities like excessive upper cervical extension, lower cervical flexion along with protracted scapulae and rounding of shoulders. This is the most dysfunctional posture as reported by szeto et al.⁽⁵⁾ and such a faulty posture results in increased activity of upper trapezius and cervical erector spinae⁽⁶⁾ also leading to slumping which can cause nerve involvement and neurological symptoms added up along with pain in the long run if such working postures are continued further. It is also reported in the literature that faulty cervical posture can ultimately lead to compensatory changes in the entire spine causing low back issues along with other aches and pain in the body due to the overburden musculoskeletal system^(3,4). Villaneuva et al reported that trunk muscle activity is influenced largely by head position⁽⁶⁾. Round back sitting posture further puts the lower spine under tremendous stress^(6,7).

Thus this survey was conducted to understand the work from home culture in a better way and thereby help people be more aware that postural correction can reduce their musculoskeletal pain as said by Mathiaasen et al. although we do agree that this was a survey study and hence proper objective knowledge of an individual's working posture and pain symptoms could not be evaluated and assessed⁽⁷⁾.

CONCLUSION:

Though the degree of discomfort, ache and pain experienced by an individual is highly subjective it can still be related to external factors like work environment and ergonomics assumed while working. It is debatable if work ergonomics are usually incorrect or it is affected more due to work from home in this pandemic but this survey surely implies that work ergonomics do have an effect on musculoskeletal system and are one of the causes of chronic pain conditions. It implies the importance of spreading more awareness among our young working professionals regarding the correct work ergonomics and its long term effects. Also it paves a way to conduct a follow up study post

postural correction to quantify pain.

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