

Physical and Self-Perceived Occupational Stress Associated with Work from Home Situation in Teachers during the COVID-19 Pandemic

Jui Vijay Bane¹, Sheetal Aurangabadkar², Asmita Karajgi³

¹Assistant Professor, The SIA College of Health Sciences, College of Physiotherapy; Dombivli.

²Assistant Professor, The SIA College of Health Sciences, College of Physiotherapy; Dombivli.

³Professor and Head, The SIA College of Health Sciences, College of Physiotherapy; Dombivli.

Corresponding Author: Jui Vijay Bane

ABSTRACT

The COVID-19 related lockdown has led to changes in lifestyle and physical activity of teachers. The objective of this study was to analyze the presence of musculoskeletal and self-perceived occupational stress in teachers during the Work From Home (WFH) situation because of the lockdown. An online, cross-sectional study was carried out in a sample of 73 teachers. The outcome measures used were the Nordic pain questionnaire and perceived occupational stress during online teaching using a self-administered questionnaire. The survey revealed that 61.6% (45) of the teachers experienced musculoskeletal pain in last 3 months of the lockdown. Lower back pain was found in 19% (45) teachers followed by neck pain 17% (41); shoulder pain 14% and upper back pain 12% (30). Among the factors causing occupational stress 16% (25) teachers strongly agreed that lack of assessment of students and conducting exams was a major cause for stress. 12% (18) teachers strongly agreed that communication during the online classes was a major concern and also the general distress due to the pandemic condition and the fear of infection also caused stress during the lockdown period. 13% (27) teachers were not satisfied with the lecture quality and 12% (25) teachers agreed that having no experience in online teaching was one of the reasons for occupational stress.

Thus, these factors should be considered when implementing remedial and wellness program for teachers to improve their quality of life during this pandemic.

Keywords: Musculoskeletal, Occupational stress, lockdown, physical activity, Nordic pain questionnaire.

INTRODUCTION

The COVID pandemic has shattered daily routine and triggered chaos, fear, anxiety and stress among people. [1] This pandemic has also significantly affected the physical and mental state of the people of all the sectors including academic fraternity all over the globe. Due to scrupulous isolation measures and close down of the universities, colleges, academic fraternity is under insurmountable mental pressure which is raising prevalence and rate of stress, anxiety and depression among them. [2]

The current covid-19 pandemic situation has brought the work from home

scenario into limelight. Due to dilemma of lockdown and to maintain social distancing, authorities have instructed teaching fraternity to take online classes. [3] All professionals have opted this safer option to sit at their homes and work during this global pandemic. Though it is the need of the hour, studies are showing it can be deleterious to our physical and mental health. Like all the other working professionals, teachers also had to conduct online lectures, seminars and tests. This pandemic, has led teachers to shift from traditional to online teaching which might have implications on their physical and

mental health. Meanwhile, educational administrations have not stopped the scholar year, so the teachers have found themselves coping with online education while attending personal issues. [4]

Today, the working pattern of teachers has changed to a greater extent with respect to preparing for classes/lectures on power point presentations, conducting online seminars and assignments leading to increased computer use. Awkward sitting postures, repetitive tasks make teachers susceptible to WRMSKD. Work-related Musculoskeletal disorders (WRMSKD) are category of injuries involving damage to muscles, tendons, nerve, neurovascular bundles caused by 'Misuse' or 'Overuse' and are noted for their lack of specific diagnosis. They occur over a time and are associated with strenuous and repetitive work. [5] Use of laptops and cell phones frequently, both to support their academic activity and in free time, tend to adopt, inappropriate posture that causes pain and musculoskeletal alterations in upper limb and spine. Lockdown brought with it the probable difficulty in doing physical activity in general in all the population. As people had difficulty in going out of their houses due to government restrictions or were permitted to go out for only essential services, physical activity was largely affected. Overall reduced physical activities, anxiety and stress related to online teachers and overwork while attending personal and academic issues can trigger musculoskeletal aches and pain in teachers.

Teachers also have to deal with lot of cognitive demands like planning and preparing for online lectures, use of technology (AV aids) for their online academic, scientific research as well as for their administrative duties during this lockdown period. With hardly any domestic help at home and balancing all the domestic chores, taking care of the family needs and completing online teaching assignments can be stressful to most of the teaching faculty. Thus teachers workload can be considered quite high, consequently teaching profession

can be characterized by high level of stress and physical complaints. [6]

Thus the purpose of the study was to study the effect of work from home on musculoskeletal and mental wellbeing of teachers which can help to take remedial measures to promote physical and mental health and a sense of preparedness while bridging the gap between traditional and online teaching. The objectives of our study were to determine the presence of musculoskeletal pain and self-perceived occupational stress in teachers associated with Work from Home situation during the Covid-19 Pandemic and to find the factors responsible for self-perceived occupational stress.

MATERIALS & METHODS

A cross-sectional study using convenient sampling was conducted online to understand the effect of Work from home culture on musculoskeletal and occupational health of teachers during the Covid 19 pandemic. The questionnaire was made in the form of a Google form. Permission from ethical committee was taken before starting the study. Teachers teaching in secondary schools, junior colleges and degree colleges, living in the metropolitan area (India) in the age group of 20-50 years were included in the study. A written consent was taken along with the questionnaire. The Google form was circulated to teachers through WhatsApp and email in the third and fourth phase of lockdown. The responses received during these 4 weeks were considered for further analysis. A total of 73 responses were received during these 4 weeks which were considered for further analysis.

The questionnaire consisted of 5 sections. Section 1 consisted of Demographic data.

Section 2 consisted of detailed work history during the lockdown period.

Section 3 consisted of questions related to awareness about ergonomics in teachers and if they applied these ergonomic principles during the lockdown.

Section 4 aimed to assess the musculoskeletal pain using the standardized Nordic Musculoskeletal questionnaire (NMQ) which focuses on the presence, location and severity of musculoskeletal symptoms. The NMQ assess pain in the 9 different body areas including: Neck, Shoulders, upper back, Elbows, Wrist/hands, Lower back, Hips/thighs, Knees and Ankles/feet.

Section 5 assessed the prevalence of occupational stress among teachers and the various factors causing this stress.

The Nordic's questionnaire is the most widely used method to assess the presence of work-related musculoskeletal disorders across various occupations.^[7] It is a valid and reliable method of assessing work related musculoskeletal disorders. It consists of 2 sections.

Section 1: A general questionnaire of 40 forced-choice items identifying areas of the body causing musculoskeletal problems. Completion is aided by a body map to indicate nine symptom sites being neck, shoulders, upper back, elbows, low back, wrist/hands, hips/thighs, knees and ankles/feet. Respondents are asked if they

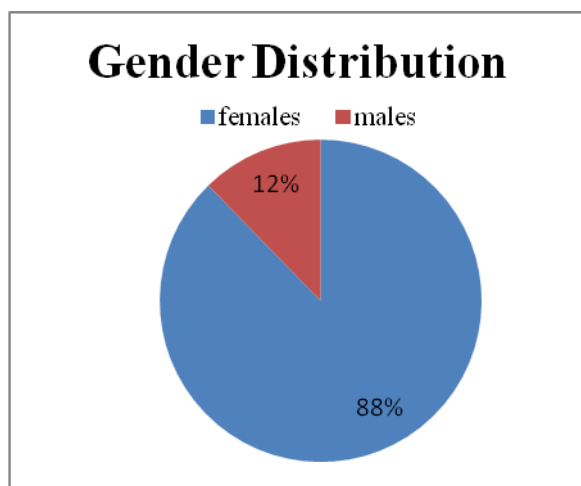
have had any musculoskeletal trouble in the last 12 months and last 7 days which have prevented normal activity.

It assess 9 areas of the body, neck, shoulders, upper back, elbows, low back, wrist / hands, hips / thighs, knees and ankles / feet. A body map assists in answering the questions. Subjects are to respond about their pain complaints over the last 12 months and last 7 days, which has prevented their routine day to day activity.

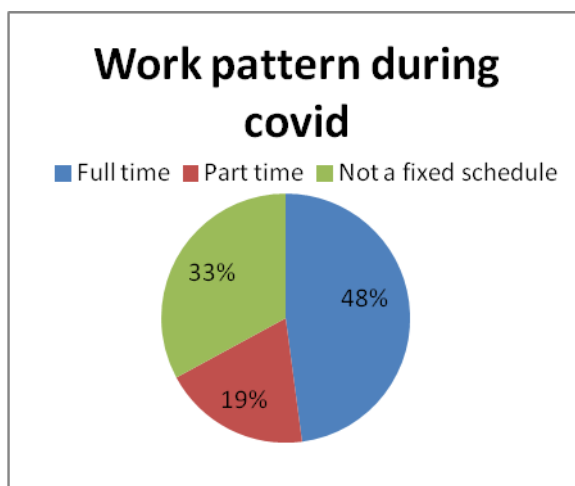
Section 2: additional questions relating to the neck, the shoulders and the lower back further detail relevant issues. Twenty-five forced-choice questions elicit any accidents affecting each area, functional impact at home and work (change of job or duties), duration of the problem, assessment by health professional and musculoskeletal problems in the last 7 days.

RESULTS

A total of 73 responses were received, out of which 64 were females (87.7%) and 9 were males (12.3%) in the age group of 21-56 years (Mean age of 41.50).



Pie chart depicting gender distribution of the study sample.



Pie chart depicting the work pattern during the Work from home situation during the Covid 19 Pandemic.

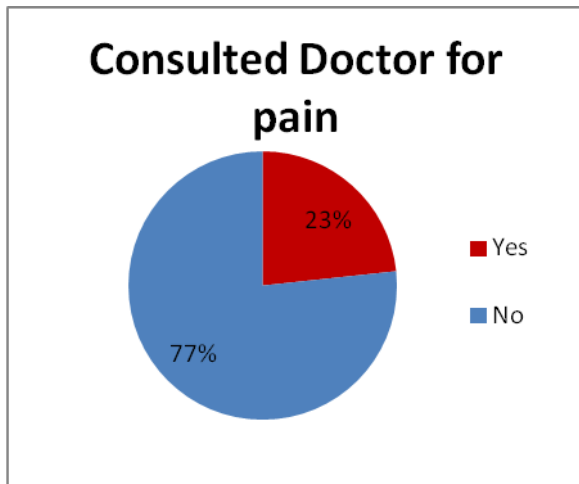
Most of the population had to work for full time, in our study 35 (47.5%) teachers were working full time, 24 (32.9%) teachers did not have a fixed schedule with

approximate time ranging from a minimum of 2-4 hours to a maximum of 16-18 hours and 14 (19.2%) were working part time.

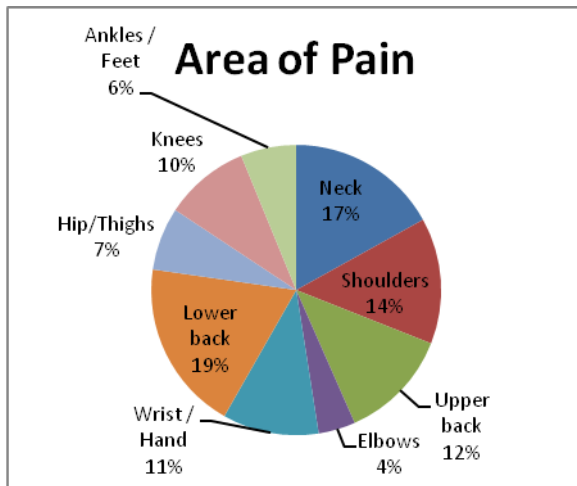
Presence of Musculoskeletal Pain:



Pie chart depicting presence of MSK pain in the last 3 months.



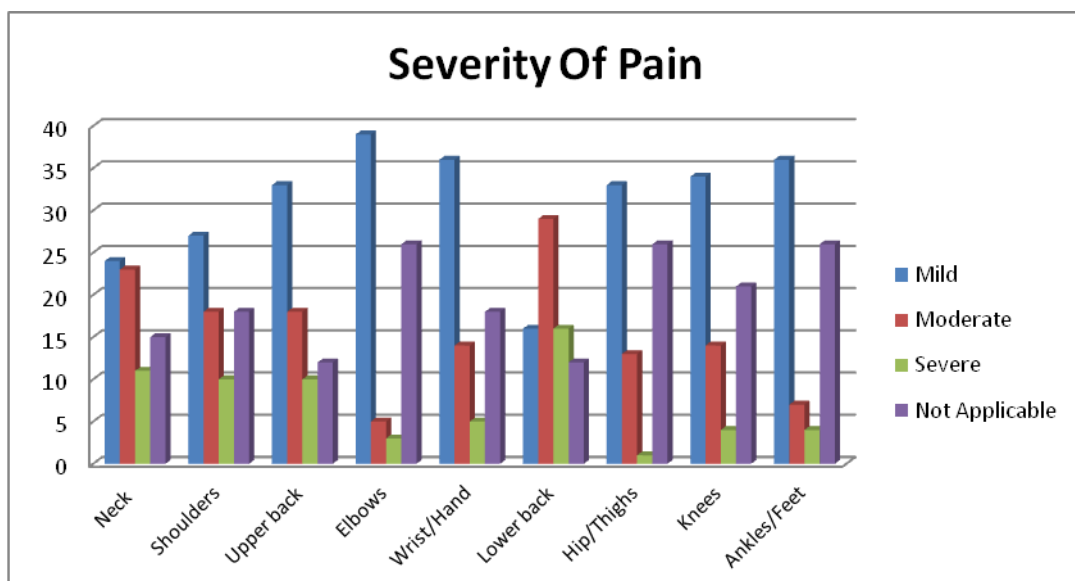
Pie chart depicting the number of teachers who had to take medical consultation for the pain.



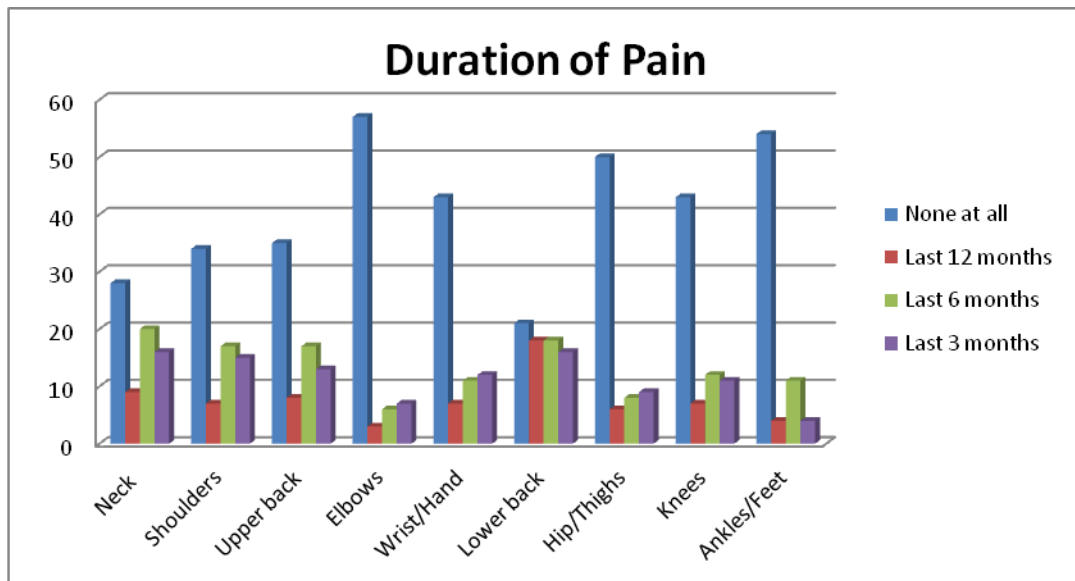
Pie chart depicting area of pain

The complaint of pain was majorly in the lower back followed by neck, shoulder and upper back. Other areas like wrist, knees, hip and elbows were also involved for a few.

41 teachers complained of neck pain, out of which 16 teachers had started experiencing this pain only in the last 3 months. Similarly out of 46 teachers who complained of lower back pain, 16 had experienced it for the first time in the last 3 months.

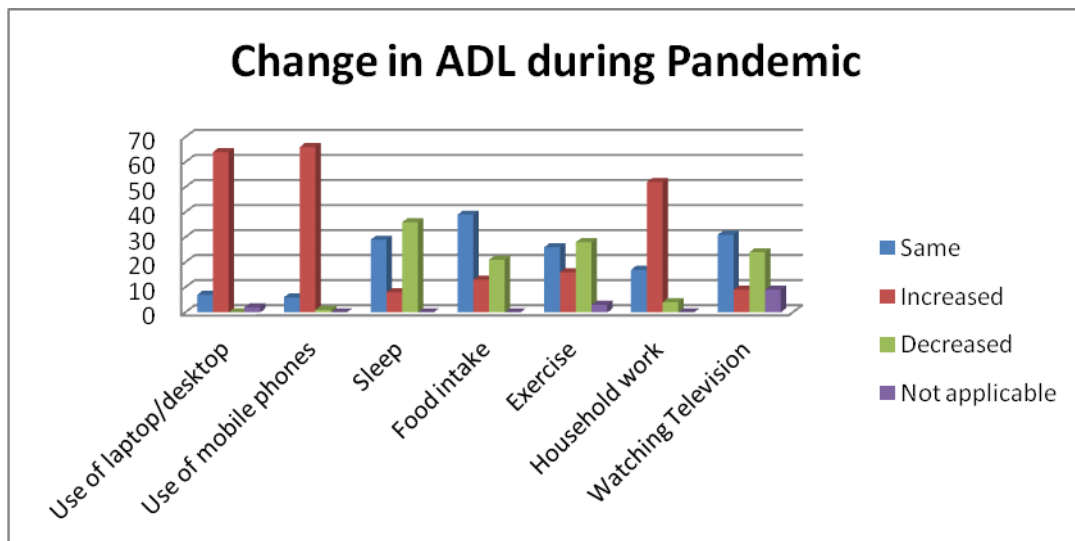


Bar graph showing the severity of Pain across various areas.



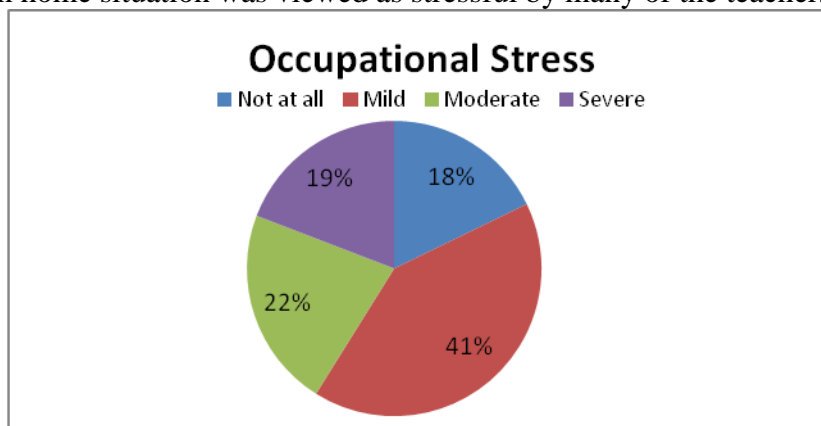
The change in the working pattern influenced the Activities of daily living as well. The use of laptops (64) and mobile phones (66) increased maximally. The

duration of sleep decreased (36) for quite a few. Other activities like food intake, exercise, watching television, household work was also influenced.



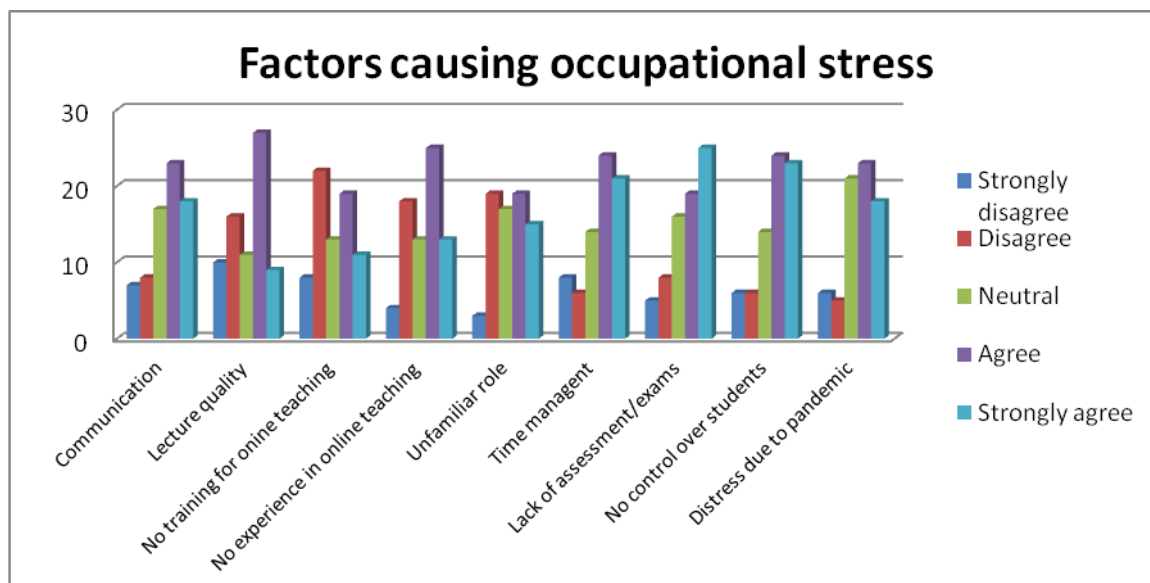
Bar graph depicting the change in the Activities of Daily living during the Work from Home situation.

The work from home situation was viewed as stressful by many of the teachers.



Pie chart depicting the presence of Self-perceived occupational stress in Teachers during WFH.

Factors responsible for occupational stress



Bar graph depicting the various factors responsible for occupational stress perceived by teachers in the WFH situation

DISCUSSION

The present study was conducted to determine the presence of musculoskeletal symptoms and the self-perceived occupational stress associated with the WFH situation due to the COVID-19 pandemic.

Our study depicted that 61.6% of the study population had musculoskeletal complaints in last 3 months, when the lockdown was introduced and the teachers had to adopt the WFH scenario like most other professionals. Out of these 23.3% had to take medical consultation for their pain, indicating the severity of it.

The most affected areas were Lower back 19% followed by neck, shoulders and upper back 17%, 14% and 12% respectively.

The causes of these musculoskeletal symptoms during the work from home situation can be due to the increased working hours, improper desks, lack of physical activity, and awkward postures as depicted in our study. A study done in China to study the effect of COVID situation, one month into the lockdown on the Health, distress and life satisfaction of individuals. The study said that the restrictive measures in China were effective in containing the spread of COVID-19 by

mid-February and were applauded by WHO.^[8] However, those measures had disrupted people's jobs and lives immensely and hence may have important implications for their health and wellbeing.^[9]

Another systematic review done to find out the biomechanical aspects of lower back pain in Work related musculoskeletal disorders were, heavy physical work, awkward static and dynamic working postures, and lifting. The psychosocial risk factors identified were negative affectivity, low level of job control, high psychological demands and high work dissatisfaction.^[10]

These observations are true for our study as well. Owing to the lockdown the teachers had to manage the household work along with the job, uncertain working hours, increased stress due to lack of job security, new working conditions, fear of the spread of the infection all could have possibly culminated into musculoskeletal pain.

The second most commonly affected areas were neck, shoulder and upper back. A similar study done on Indians during the lock down reported that there was increased pain in the neck, shoulders and upper back in office going individuals owing to confinement, the prolonged working time and increased screen use.^[11]

Along with physical stress, 41.1% of the teachers reported that they experienced mild stress due to the WFH situation. 21.9% teachers experienced moderate stress and 19.2% teachers experienced severe stress. We tried to analyze the possible factors responsible for this stress, and the data depicts that the lack of control over the students due to the online teaching, difficulty in conducting exams and assessment of students was a major concern and the cause of stress among teachers. Along with it the time management with respect to household chores and taking online classes, preparing for lectures, seminars and tests was a challenge. A few senior teachers also reported that the lack of knowledge of conducting online lectures, the use of technology, challenge in effective communication, the altered/reduced quality of lectures and a general sense of anxiety because of the lockdown situation and the spread of the infection, were also the causative factors for stress among teachers.

A study revealed that, the situation of lockdown has led to major problems in teachers' lives, as evidenced by the pressure that online educational methods have placed on them: many hours of work and difficulties due to the lack of physical contact or due to the obstacles created on combining personal life with family. ^[12] These results are quite comparable to our findings.

Another important highlight of our study with respect to physical activity is that, 46.6% of the teachers (population) was used to doing at least some physical activity in the form of brisk walking, yoga, stretching exercise, etc. before the lockdown but this drastically reduced during the lockdown owing to the restrictions, increased workload of the domestic chores and responsibilities of the workplace. This reduced physical activity in turn can be the cause of both physical and mental stress in teachers. ^[13, 14]

CONCLUSION

Our study thus concludes that the current lockdown which brought the WFH situation has impacted the physical and mental health of the teachers. These factors should be considered when implementing remedial and wellness program for teachers to improve their quality of life during this pandemic.

Also the relation of these musculoskeletal symptoms and self-perceived stress with ergonomics, physical activity and attitude towards life can be further studied.

ACKNOWLEDGEMENT

We would like to thank all the teachers who participated in this online study and help us understand the effect of WFH on various aspects of health.

REFERENCES

1. Montemurro N. The emotional impact of COVID-19: From medical staff to common people. *Brain Behav Immun.* 2020;87:23-24
2. Charnsil, C., Chailangkarn, K., 2020. Post-traumatic stress disorder and related factors in students whose school burned down; cohort study. *Asian J. Psychiatry* 102004.
3. Choudhury, P., Koo, W., Li, X., 2020. Working from Home Under Social Isolation: Online
4. Content Contributions During the Coronavirus Shock. Harvard Business School
5. Technology & Operations Mgt. Unit Working Paper, (20-096).
6. Wang C and Zhao H. The impact of COVID-19 on anxiety in Chinese University Students. *Front.Psychol.*11:1168
7. Isabel LN. Introduction to musculoskeletal disorders. EU-Occupational Safety and Health Agency website.
8. Bogaert, De Martelaer, Deforche, et al. Associations between different types of physical activity and teachers' perceived mental, physical, and work-related health. *BMC Public Health.*2014;14:534.
9. López-Aragón, López-Liria, Callejón-Ferre, et al. Applications of the Standardized Nordic Questionnaire: A Review. *Sustainability.* 2017; 9:1514.)

10. The Washington Post, 2020. Chinese officials note serious problems in coronavirus response. The World Health Organization keeps praising them. https://www.washingtonpost.com/world/asia_pacific/chinese-officials-note-serious-problems-incoronavirus-response-the-world-health-organization-keeps-praising-them/2020/02/08/b663dd7c-4834-11ea-91ab-ce439aa5c7c1_story.html (accessed 10 March 2020).
11. Lima CKT, Carvalho PMM, Lima IAAS et al. The emotional impact of corona virus 2019-nCoV (new Coronavirus disease). *Psychiatry Res.* 2020;287:112915.
12. Da Costa BR, Vieira ER. Risk factors for work-related musculoskeletal disorders: A systematic review of recent longitudinal studies. *Am J Ind Med.* 2010 Mar;53(3):285-323.
13. Piya Majumdar, Ankita Biswas, and Subhashis Sahu. COVID-19 pandemic and lockdown: cause of sleep disruption, depression, somatic pain, and increased screen exposure of office workers and students of India. *Chronobiol Int.* 2020 Aug;37(8):1191-1200.
14. Aperribai L, Cortabarría L, Aguirre T, et al. Teacher's Physical Activity and Mental Health During Lockdown Due to the COVID-2019 Pandemic. *Front. Psychol.* 2020

How to cite this article: Bane JV, Aurangabadkar S, Karajgi A. Physical and self-perceived occupational stress associated with work from home situation in teachers during the COVID-19 pandemic. *Int J Health Sci Res.* 2021; 11(2):117-124.
