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A study on the prevalence of musculoskeletal disorders among Male IT professional Telecommuters and Male IT professional Office Goers during COVID-19 pandemic.

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ABSTRACT

Background: Musculoskeletal disorders in developing countries are considered as main cause of occupational disorders and disability and highly associated with socioeconomic burden to individual, organization and society in general view. COVID-19 pandemic has enforced the concept 'Work from Home' (WFH) into an officially mandated, strictly enforced rule. Now, WFH concept is emerging from all sectors, from IT sectors to teaching sectors. WFH concept is new to majority of the employees, as the COVID 19 has forced almost all the employees of all the sectors to work from home for the first time. As the employees are experiencing new environment, the purpose of this study was to determine the prevalence of musculoskeletal disorders among IT professional male telecommuters (people who work from home) and office goers.

Method: This cross-sectional study was carried out among 100 Normal population between the age group of 25-35 years, which has been divided into two groups. Group A (50) includes individuals who work from home telecommuters and Group B (50) includes individuals who on daily basis travel to office -office goers. Standard Nordic questionnaire has been employed to assess prevalence of MSD's among the two groups.

Results: The results showed that there is significant difference between different category of neck 7 days, shoulder 7 days, elbow 7 days, wrist/hand 12 months, upper back 7 days, lower back 7 days, hip/thigh/buttocks 7 days pain and the groups but there is no significant difference between other joint region pain and groups.

Conclusion: There is a significant difference between different category of neck, shoulder, elbow, wrist/hand, upper-back, lower-back, h/t/b pain and the groups so we can conclude from the results that telecommuters are prone to multiple MSD's due to COVID-19 pandemic situation that has forced them to WFH with no proper ergonomic facilities provided at home environment. Therefore, proper counselling, postural correction, and awareness sessions should be conducted on ergonomics to maintain and prevent the MSD's among IT professional telecommuters and office goers.

Key words: MSD's, telecommuters, office goers, Nordic scale, QOL, WRMSD.

INTRODUCTION

Musculoskeletal disorder (MSD'S) refers to injuries affecting the soft tissues of the neck, shoulder, elbow, hand wrist and fingers. Musculoskeletal (MSK) pain is very common in both developed & developing countries with estimates of prevalence ranging from 11-60%. Musculoskeletal condition affects more than 1.7 billion people worldwide and have the 4th greatest impact on the overall health of the world population, considering both death and disability. [1,2] COVID-19 pandemic has enforced the concept 'Work from Home' (WFH) into an officially mandated, strictly enforced rule. Now, WFH concept is emerging from all sectors, from IT sectors to teaching sectors. WFH concept is new to majority of the employees, as the COVID 19 has forced almost all the employees of all the sectors to work from home for the first time.^[3] The Global Burden of Disease (GBD) study provides evidence of the impact of musculoskeletal conditions, highlighting the significant disability burden associated with these conditions. In the 2017 GBD study, musculoskeletal conditions were the highest contributor to global disability (accounting for 16% of all years lived with disability), and lower back pain remained the single leading cause of disability since it was first measured in 1990. While the prevalence of musculoskeletal conditions varies by age and diagnosis, between 20%–33% of people across the globe live with a painful musculoskeletal condition.^[4] Work-related musculoskeletal

METHODOLOGY

Study criteria

- Sample design The sample design is convenient sampling.
- Sample size A sample size of 100 normal population aged 25-35 Criteria for selection
- Inclusion criteria Age group: 25-35yrs Sex: Male
 - Occupation: IT professionals
- Exclusion criteria Any diagnosed case musculoskeletal/neurological/psychological/psychiatri c/deficit or disorders that can affect the study. Procedure

disorders (WRMSDs) serious are socioeconomic problems in modern society from two point of view. First, WRMSDs are one of the most common work-related diseases in developed countries. Second, WRMSDs are key factors for sick leave, which is common around the world. ^[5] Most of the researches agree that exposure to a combination of work place risk factors and an interaction between them are the major contributors to WMSD'S. Epidemiologic studies of workers have associated these disorders with many work- place physical and psychosocial factors. ^[6] Specific physical factors associated with these disorders include intense, repeated or sustained excretions, awkward, sustained, or extreme postures of the body, insufficient recovery time, and high impact forces are the primary risk factors for WRMSD'S.^[7] The WRMSD's developed due to exposure of above factors over a longer period of time that need suitable coping strategies which help in controlling it. Workers performing strenuous work for longer duration can cope with musculoskeletal symptoms by modifying their working techniques with the help of ergonomic principles.^[8] Hence, this study was undertaken for finding the prevalence of musculoskeletal disorder among telecommuters and office goers using Standard Nordic Musculoskeletal Questionnaire. The findings will help improve their working conditions and prevent work-related disorders. [9]

Sample of 100 subjects were taken among the age group of 25-35 yrs which has been divided into two groups.

Group A (50) includes telecommuters (people who work from home and Group) B (50) includes office goers.

Then the purpose and procedure of the test was explained to all the subjects and consent was taken.

Standard Nordic questionnaire has been employed to access prevalence of MSDs among these two groups.

This Sample, general questionnaire, recognized, validated internationally, detects symptoms in neck, back, shoulder and extremities. It presents 28 multiple choice questions, sometimes negative, structured in two well differentiated parts.

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The first part, the general one refers to symptoms in 9 parts of the body [Neck, Shoulders, Elbows, Wrist/ Hands, Upper Back, Lower Back, Hip/ Thighs, Knees & Ankles / Feet] during the last 12 months / 7 days. The second part, the specific one, refers to symptoms in 3 parts of the body [Neck, Shoulders & Lower Back] throughout the subjects working life/ 7days beforehand. In both cases, complementary information of the worker would be helpful, but not obligatory, to ensure a better evaluation.

RESULTS

The 100 individuals participated in this study are divided into two groups Group A (telecommuters) and Group B (office goers). In both the groups all are males. Nobody had any other medical problems.

Table-1

Group)			Std.
		Ν	Mean	Deviation
AGE	Group A	50	27.2800	2.76302
	Group B	50	28.3000	3.22775

Table -1: The mean and standard deviation of age is Group A is 27.28±2.763 and that of in group B is 28.3±3.227.

Table-2							
Group			l	M	ALE		
GENDE	R	Group A				50	
		Group B				50	

Table-2: The number of males in group A (telecommuters) is 50 and the number of males in group B

Table -3

Group		N	Mean	Std. Deviation
Job	Group A	50	10.54	0.676
duration	Group B	50	8.6	0.670

Table -3: The mean and standard deviation of job duration is 10.54 ± 0.676 in group A and 8.6 ± 0.670 in group B.

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DATA ANALYSIS

			Gro	oup	
Crosst	abu	lation of neck12m	Group A	Group B	Total
neck12m	N	COUNT	38	39	77
1100K I 2111	14	% WITHIN GROUP	49.4%	50.6%	100.0%
	Y	COUNT	12	11	23
		% WITHIN GROUP	52.2%	47.8%	100.0%
Total		COUNT	50	50	100
Totai		% WITHIN GROUP	50.0%	50.0%	100.0%

Table -4(a):

Chi square=0.056, p value=0.812

not significant

Table -4(b):

Chi square=16.327, p value=0.000 significant

Table -4(c):

Chi square=1.895, p value=0.169 not significant

Table -5(a):

Chi square=0.932, p value=0.334

not significant

Table -5(b):

Chi square=7.862, p value=0.005 significant

Table -5(C): Chi square=2.837, p value=0.092 not significant

Table	-6(a):
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Chi square=3.053, p value=0.081 not significant

					Gro	ouj)	
Crosst	abul	lati	on of neck7d	C	Group A	C	Group B	Total
nool/7dova	N		COUNT		24		43	67
neck/uays	IN	%	WITHIN GROUP		35.8%		64.2%	100.0%
	Y		COUNT		26		7	33
	1	%	WITHIN GROUP		78.8%		21.2%	100.0%
Total			COUNT		50		50	100
Total		%	WITHIN GROUP		50.0%		50.0%	100.0%
					Gro	ouj	р	Total
Crosstal	oulat	tioı	n of neckFI12m	(Group A	(Group B	Total Total
Naal	N		COUNT		46		49	95
Neck	IN	9	% WITHIN GROUP		48.4%		51.6%	100.0%
impairment	v		COUNT		4		1	5
	1	9	% WITHIN GROUP		80.0%		20.0%	100.0%
Total			COUNT		50		50	100
Totai		9	% WITHIN GROUP		50.0%		50.0%	100.0%
					0	Gro	oup	
Crosstal	bula	tio	n of shoulder12m		Group A	1	Group B	Total
shoulder12r	n	Ν	COUNT		37		41	78
			% WITHIN GROUI	2	47.4%		52.6%	100.0%
		Y	COUNT		13		9	22
			% WITHIN GROUI	2	59.1%		40.9%	100.0%
Total			COUNT		50		50	100

50.0%

50.0%

100.0%

				Gro	oup	
	Crosstabu	lati	on of shoulder7d	Group A	Group B	Total
	shoulder7days	Ν	COUNT	35	46	81
			% WITHIN GROUP	43.2%	56.8%	100.0%
		Y	COUNT	15	4	19
			% WITHIN GROUP	78.9%	21.1%	100.0%
	Total		COUNT	50	50	100
١.			% WITHIN CROUD	50.0%	50.0%	100.004
				Gr	oup	
	Crosstabul	atio	n of shoulderFI12m	Group A	Group B	Total
	Crosstabul Shoulder	atio N	n of shoulderFI12m COUNT	Group A 45	Group B 49	Total 94
	Crosstabul Shoulder impairment	atio N	n of shoulderFI12m COUNT % WITHIN GROUP	Group A 45 47.9%	Group B 49 52.1%	Total 94 100.0%
	Crosstabul Shoulder impairment	atio N Y	n of shoulderFI12m COUNT % WITHIN GROUP COUNT	Group A 45 47.9% 5	Group B 49 52.1% 1	Total 94 100.0% 6
	Crosstabul Shoulder impairment	atio N Y	n of shoulderFI12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP	Group A 45 47.9% 5 83.3%	Group B 49 52.1% 1 16.7%	Total 94 100.0% 6 100.0%
	Crosstabul Shoulder impairment Total	atio N Y	n of shoulderFI12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT	Group A 45 47.9% 5 83.3% 50	Group B 49 52.1% 1 16.7% 50	Total 94 100.0% 6 100.0% 100

% WITHIN GROUP

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Table -6(b):

Chi square=5.983,	p value=0.014	significant
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					Gro	oup		
Crosst	abula	tion	of elbow12m	C	Group A	Group B		Total
elbow12m	Ν		COUNT		43	48		91
		%	WITHIN GROUP		47.3%	52.7%		100.0%
	Y		COUNT		7	2		9
		%	WITHIN GROUP		77.8%	22.2%		100.0%
Total			COUNT		50	50		100
		%	WITHIN GROUP		50.0%	50.0%		100.0%
					C	iroup		
Cross	stabul	atic	on of elbow7d		Group A	broup Group	В	Total
Cross	stabul N	atio V	on of elbow7d COUNT		Group A 42	Group Group 49	В	Total 91
Cross elbow7days	stabul N	l <mark>ati</mark> c N	on of elbow7d COUNT % WITHIN GROUP	>	Group A 42 46.2%	Group Group 49 53.89	B %	Total 91 100.0%
Cross elbow7days	stabul N	l atic N	on of elbow7d COUNT % WITHIN GROUP COUNT	>	Group A 42 46.2% 8	Group Group 49 53.89 1	B %	Total 91 100.0% 9
Cross elbow7days	stabul N	latio N	on of elbow7d COUNT % WITHIN GROUP COUNT % WITHIN GROUP	>	Group A 42 46.2% 8 88.9%	Group Group 49 53.89 1 11.19	B %	Total 91 100.0% 9 100.0%
Cross elbow7days Total	stabul N Y	l <mark>atio</mark> N	on of elbow7d COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT))	C Group A 42 46.2% 8 8 88.9% 50	Group Group 49 53.89 1 11.19 50	B %	Total 91 100.0% 9 100.0% 100

Table -6(c):

Chi square=1.010, p value=0.315 not significant

Table -7(a):

Chi square=4.574, p value=0.032 significant

				Group		
Crosstabula	ation	of	wrist/hand7d	Group A	Group B	Total
	Ν	(COUNT	42	47	89
Whist/uays		ò	% WITHIN GROUP	47.2%	52.8%	100.0%
	Y	(COUNT	8	3	11
		9	% WITHIN GROUP	72.7%	27.3%	100.0%
Total	-	(COUNT	50	50	100
		9	% WITHIN GROUP	50.0%	50.0%	100.0%
	T			09.0%	50.4%	100.0%
Total	-		COUNT	50	50	100
Total			% WITHIN GROUP	50.0%	50.0%	100.0%
				Group		
Crosstab	ulatio	<u>n (</u>	of w <u>rist/handFI12m</u>	Group A	Group B	Total
Wrist	Ν	1	COUNT	44	47	91
Impairment	t		% WITHIN GROUP	48.4%	51.6%	100.0%
	Y	[COUNT	6	3	9
			% WITHIN GROUP	66.7%	33.3%	100.0%
Total			COUNT	50	50	100
			% WITHIN GROUP	50.0%	50.0%	100.0%

Table -7(b): Chi square=2.554, p value=0.110 not significant

Chi square=1.099, p value=0.295 not significant

Table -7(c):

			G	broup	F	
Crosstab	ulatio	n of upperback12m	Group A	Group I	3 Total	Table -8(a):
Upper-back	N	COUNT	41	40	81	C1: 0.005 1.0.700
12m	- 1	% WITHIN GROUP	50.6%	49.4%	100.0%	Chi square= 0.065 , p value= 0.799
	Y	COUNT	9	10	19	
		% WITHIN GROUP	47.4%	52.6%	100.0%	not significant
Total		COUNT	50	50	100.070	
Total		% WITHIN GROUP	50.0%	50.0%	100.0%	
			20.070	20.070	100.070	
			Gro	oup		
Crosstab	ulatio	n of upperback7d	Group A	Group B	Total	
Unnar haalt	Ν	COUNT	35	46	81	Table -8(b):
Оррег-баск		% WITHIN GROUP	43.2%	56.8%	100.0%	
7days	Y	COUNT	15	4	19	Chi square=7.862, p value=0.005 significa
		% WITHIN GROUP	78.9%	21.1%	100.0%	
Total	1	COUNT	50	50	100	
		% WITHIN GROUP	50.0%	50.0%	100.0%	
		Ţ	Gro	up		
Crosstabula	ation o	of upperbackFI12m	Group A	Group B	Total	Table -8(c):
Upper-back	Ν	COUNT	49	50	99	
mpanment		% WITHIN GROUP	49.5%	50.5%	100.0%	Chi square=1.010, p value=0.315 not
	Ŷ	COUNI	I 100.0%	0	1 100.00/	significant
Total	I	% WITHIN GROUP	100.0% 50	50	100.0%	_
Total		% WITHIN GROUP	50.0%	50.0%	100 0%	
		// WIIIII OKOOI	20.070	50.070	100.070	
	_		(Broup	_	
Crosstab	ulatio	n of lowerback12m	Group A	Group	B Total	Table $-9(a)$:
Crosstabu Lower-back	ulatio N	n of lowerback12m COUNT	Group A 23	Group Group 28	B Total 51	Table –9(a):
Crosstab Lower-back 12m	ulatio N	n of lowerback12m COUNT % WITHIN GROUP	Group A 23 45.1%	Group Group 28 54.9%	B Total 51 6 100.0%	Table –9(a): Chi square=1.000, p value=0.317 not
Crosstab Lower-back 12m	ulatio N Y	n of lowerback12m COUNT % WITHIN GROUP COUNT	Group A 23 45.1% 27	Group A Group 28 54.9% 22	B Total 51 6 100.0% 49	Table –9(a): Chi square=1.000, p value=0.317 not significant
Crosstabu Lower-back 12m	N Y	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP	Group A 23 45.1% 27 55.1%	Group A Group 28 54.9% 22 44.9%	B Total 51 6 100.0% 49 6 100.0%	Table –9(a): Chi square=1.000, p value=0.317 not significant
Crosstabu Lower-back 12m Total	N Y	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP	C Group A 23 45.1% 27 55.1% 50 50 0%	Group A Group 28 54.99 22 44.99 50 50 09	B Total 51 6 100.0% 49 6 100.0% 100 6 100.0%	Table –9(a): Chi square=1.000, p value=0.317 not significant
Crosstabu Lower-back 12m Total	ulation N Y	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP	Group A 23 45.1% 27 55.1% 50 50.0%	Group A Group 28 54.9% 22 44.9% 50 50.0%	B Total 51 6 100.0% 49 6 100.0% 100 6 100.0%	Table –9(a): Chi square=1.000, p value=0.317 not significant
Crosstabe Lower-back 12m Total	N Y	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP	C Group A 23 45.1% 27 55.1% 50 50.0%	Group 28 54.99 22 44.99 50 50.09 Group	B Total 51 6 100.0% 49 6 100.0% 100 6 100.0%	Table –9(a): Chi square=1.000, p value=0.317 not significant
Crosstab Lower-back 12m Total Crossta	ulation N Y	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP	Group A 23 45.1% 27 55.1% 50 50.0% Group	Group 28 54.99 22 44.99 50 50.09 Group	B Total 51 6 100.0% 49 6 100.0% 100 6 100.0% B Total	Table –9(a): Chi square=1.000, p value=0.317 not significant Table -9(b):
Crosstab Lower-back 12m Total Crossta Lower-back	ulatio N Y Abulat	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP ion of lowerback7d COUNT	Group A 23 45.1% 27 55.1% 50 50.0% Group 16	Group A Group 28 54.9% 22 44.9% 50 50.0% Group A Group 40	B Total 51 6 100.0% 49 6 100.0% 100 6 100.0% 5 Total 56	Table –9(a): Chi square=1.000, p value=0.317 not significant Table -9(b):
Crosstab Lower-back 12m Total Crossta Lower-back	ulation N Y bulat	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP % WITHIN GROUP ion of lowerback7d COUNT % WITHIN GROUP	Group A 23 45.1% 27 55.1% 50 50.0% Group 16 28.6%	Group 28 54.99 22 44.99 50 50.09 Group A Group A Group 40 5 41	B Total 51 6 100.0% 49 6 100.0% 100 6 100.0% Total 56 % 100.0%	Table –9(a): Chi square=1.000, p value=0.317 not significant Table -9(b): Chi square=23.377, p value=0.000
Crosstab Lower-back 12m Total Crossta Lower-back 7days	Valuation N Y N N Y	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP ion of lowerback7d COUNT % WITHIN GROUP COUNT	Group A 23 45.1% 27 55.1% 50 50.0% Group 16 28.6% 34	Group 28 54.99 22 44.99 50 50.09 Group A Group 40 50 71.49 10	B Total 51 6 100.0% 49 6 100.0% 100 6 100.0% 56 7 Total 56 % 100.0%	Table –9(a): Chi square=1.000, p value=0.317 not significant Table -9(b): Chi square=23.377, p value=0.000 significant
Crosstab Lower-back 12m Total Crossta Lower-back 7days	V N Y N N Y	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP ion of lowerback7d COUNT % WITHIN GROUP COUNT % WITHIN GROUP	Group A 23 45.1% 27 55.1% 50 50.0% Group 16 28.6% 34 77.3%	Group 28 54.99 22 44.99 50 50.09 Group A Group 40 50 51.09	B Total 51 6 100.0% 49 6 100.0% 100 6 100.0% 56 6 Total 56 6 100.0% 44 100.0%	Table –9(a): Chi square=1.000, p value=0.317 not significant Table -9(b): Chi square=23.377, p value=0.000 significant
Crosstab Lower-back 12m Total Crossta Lower-back 7days	viation N Y N N Y	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP ion of lowerback7d COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP	Group A 23 45.1% 27 55.1% 50 50.0% Group 16 28.6% 34 77.3% 50	Group 28 54.99 22 44.99 50 50.09 Group A Group 6 71.49 10 50 50.09	B Total 51 6 100.0% 49 6 100.0% 100 6 100.0% 56 6 100.0% 44 44 6 100.0% 44 100.0% 44	Table –9(a): Chi square=1.000, p value=0.317 not significant Table -9(b): Chi square=23.377, p value=0.000 significant
Crosstab Lower-back 12m Total Crossta Lower-back 7days Total	Valuation N Y N N Y	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP ion of lowerback7d COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP	C Group A 23 45.1% 27 55.1% 50 50.0% Group 16 28.6% 34 77.3% 50 50.0%	Group 28 54.99 22 44.99 50 50.09 Group A Group A Group 40 50 50.09 50.09 50.09	B Total 51 6 100.0% 49 6 100.0% 100 6 100.0% 56 7 Total 56 % 100.0% 44 100.0% 100 0 100.0%	Table –9(a): Chi square=1.000, p value=0.317 not significant Table -9(b): Chi square=23.377, p value=0.000 significant
Crosstab Lower-back 12m Total Crossta Lower-back 7days Total	Vabulation N Y N Y	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP ion of lowerback7d COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP	Group A 23 45.1% 27 55.1% 50 50.0% Group 16 28.6% 34 77.3% 50 50.0%	Group 28 54.99 22 44.99 50 50.09 Group A Group 40 50 50.09 6 71.49 10 50 50.09	B Total 51 6 100.0% 49 6 100.0% 100 6 100.0% 56 76 76 76 76 76 76 76 76 76 7	Table –9(a): Chi square=1.000, p value=0.317 not significant Table -9(b): Chi square=23.377, p value=0.000 significant
Crosstabu Lower-back 12m Total Crossta Lower-back 7days Total	N Y N N Y Y	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP ion of lowerback7d COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP	C Group A 23 45.1% 27 55.1% 50 50.0% Group 16 28.6% 34 77.3% 50 50.0%	Group 28 54.99 22 44.99 50 50.09 Group A Group 40 50 50.09 Group 40 50 50.09 Group 40 50 50 50.09 6 50.09 50 50 50 50 50 50 50.09 50 50 50 50 50.09	B Total 51 51 51 51 51 51 51 51 51 51	Table –9(a): Chi square=1.000, p value=0.317 not significant Table -9(b): Chi square=23.377, p value=0.000 significant
Crosstabu I2m Total Crossta Lower-back 7days Total Crosstabulatie Lower-back	vlation N Y N N N	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP ion of lowerback7d COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP	Group A 23 45.1% 27 55.1% 50 50.0% Group 16 28.6% 34 77.3% 50 50.0% 50.0%	Group 28 54.99 22 44.99 50 50.09 Group A Group A Group 50 50.09 Group 50 50.09 Group 50 50 50 50.09 50 50 50 50.09 50 50 50 50 50 50 50 50 50 50 50 6 6 6 6 6 6 6 6 6 6 6 6 6 7 6	B Total 51 51 51 51 51 51 51 51 51 51	Table –9(a): Chi square=1.000, p value=0.317 not significant Table -9(b): Chi square=23.377, p value=0.000 significant Table -9(c):
Crosstabu Lower-back 12m Total Crossta Lower-back 7days Total Crosstabulati Lower-back Impairment	N Y N N Y on of 1	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP ion of lowerback7d COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP	Group A 23 45.1% 27 55.1% 50 50.0% Group 16 28.6% 34 77.3% 50 50.0% Group Group A 36 46.2%	Group 28 54.99 22 44.99 50 50.09 Group A Group 40 50 50.09 Group 40 50 50.09 Group 40 50 50 50 50 50 50 50 50 50 50 50 50 50.09 Group 1 42 53.8%	B Total 51 4 100.0% 49 4 100.0% 100 6 100.0% 56 7 B Total 56 7 0 100.0% 100.0% 100.0% 100.0%	Table –9(a): Chi square=1.000, p value=0.317 not significant Table -9(b): Chi square=23.377, p value=0.000 significant Table -9(c): Chi square=2.098, p value=0.148 not
Crosstabu Lower-back 12m Total Crossta Lower-back 7days Total Crosstabulatie Lower-back Impairment	Vabulat N Y N Y On of J	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT	Group A 23 45.1% 27 55.1% 50 50.0% Group 16 28.6% 34 77.3% 50 50.0% Group Group A 36 46.2% 14	Group 28 54.99 22 44.99 50 50.09 Group A Group 40 50 50.09 Group 40 50 50.09 Group 40 50 50 50 50 50 50 50 50 50 50 50.09 Group 1 42 53.8%	B Total 51 6 100.0% 49 6 100.0% 100 6 100.0% 56 76 76 78 100.0% 22	Table -9(a): Chi square=1.000, p value=0.317 not significant Table -9(b): Chi square=23.377, p value=0.000 significant Table -9(c): Chi square=2.098, p value=0.148 not significant
Crosstabu I cower-back 12m Total Crossta Lower-back 7days Total Crosstabulati Lower-back Impairment	V V V V V V V V V	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP ion of lowerback7d COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP	C Group A 23 45.1% 27 55.1% 50 50 50.0% Group 16 28.6% 34 77.3% 50 50.0% Group Group A 36 46.2% 14 63.6%	Group 28 54.99 22 44.99 50 50 0 50 0 0 0 0 0 0 0 0 0 0 0 0 0	B Total 51 6 100.0% 49 6 100.0% 100 6 100.0% 56 76 76 78 100.0% 22 100.0%	Table –9(a): Chi square=1.000, p value=0.317 not significant Table -9(b): Chi square=23.377, p value=0.000 significant Table -9(c): Chi square=2.098, p value=0.148 not significant
Crosstabu I cower-back 12m Total Crossta Lower-back 7days Total Crosstabulatie Lower-back Impairment	vlation N Y obulat N Y	n of lowerback12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP ion of lowerback7d COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT	C Group A 23 45.1% 27 55.1% 50 50.0% Group 16 28.6% 34 77.3% 50 50.0%	Group 28 54.99 22 44.99 50 50.09 Group A Group 40 50.09 50.09 0 50.09 50.09 50.09 50 50.09	B Total 51 6 100.0% 49 6 100.0% 100 6 100.0% 56 76 76 100.0% 44 100.0% 100 78 100.0% 22 100.0% 100	Table –9(a): Chi square=1.000, p value=0.317 not significant Table -9(b): Chi square=23.377, p value=0.000 significant Table -9(c): Chi square=2.098, p value=0.148 not significant

			-				e 0, issue 9 September 2020 15514. 2520-7
			L	G	roup		Table -10(a):
Crosst	abulati	on of h	/t/b12m	Group A	Group B	Total	
t/t/b12m	Ν		COUNT	40	45	85	Chi square=1.961, p value=0.161 no
		% WI	THIN GROUP	47.1%	52.9%	100.0%	significant
	Y		COUNT	10	5	15	significant
		% WI	THIN GROUP	66.7%	33.3%	100.0%	
Total			COUNT	50	50	100	
		% WI	THIN GROUP	50.0%	50.0%	100.0%	
					Group		
Cros	sstabul	ation o	f h/t/b7d	Group	A Group B	Total	Table -10(b):
			COUNT	36	47	83	
h/t/b7days	Ν	% V	VITHIN GROUP	43.4%	56.6%	100.0%	Chi square=8.575, p value=0.003
		/0 /	COUNT	14	3	17	significant
	Y	% V	VITHIN GROUP	82.4%	17.6%	100.0%	-
		70 1	COUNT	50	50	100.070	
Total		% V	VITHIN GROUP	50.0%	50.0%	100.0%	
		70 1		20.070	50.070	100.070	
				G	roup		$T_{abla} = 10(a)$
Crosst	abulati	on of h	/t/bFI12m	Group A	Group B	Total	1able = 10(c).
	N		COUNT	47	47	94	Chi squara $=0.001$ p value $=1.000$
h/t/b		% W	/ITHIN GROUP	50.0%	50.0%	100.0%	CIII square=0.001, p varue=1.000
impairment	Y		COUNT	3	3	6	significant
	_	% W	/ITHIN GROUP	50.0%	50.0%	100.0%	
Total	4		COUNT	50	50	100	
		% W	/ITHIN GROUP	50.0%	50.0%	100.0%	
		1,					
					Group		Table -11(a):
Cro	sstabul	ation o	of knee12m	Group	A Group B	Total	
	N		COUNT	47	43	90	
knee12m)0	Chi square=1.778, p value=0.182 no
knee12m		% \	WITHIN GROUP	52.2	% 47.8%	100.0%	Chi square=1.778, p value=0.182 no
knee12m	Y	% \	WITHIN GROUP COUNT	52.20	% 47.8% 7	100.0% 10	Chi square=1.778, p value=0.182 no significant
knee12m	Y	% V % V	COUNT COUNT WITHIN GROUP	52.20 3 30.00	% 47.8% 7 7 % 70.0%	100.0% 10 100.0%	Chi square=1.778, p value=0.182 no significant
knee12m Total	Y	% \ % \ % \	COUNT COUNT WITHIN GROUP COUNT	52.29 3 30.09 50	% 47.8% 7 7 % 70.0% 50 50	100.0% 10 100.0% 100 100	Chi square=1.778, p value=0.182 no significant
knee12m Total	Y	% \ % \ % \	COUNT COUNT WITHIN GROUP COUNT WITHIN GROUP	52.2 3 30.0 50 50.0	% 47.8% 7 7 % 70.0% 50 50	100.0% 10 100.0% 100 100 100.0%	Chi square=1.778, p value=0.182 no significant
knee12m Total	Y	% \ % \ % \	WITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP	52.2 3 30.0 50 50.0	% 47.8% 7 7 % 70.0% 50 50 % 50.0% Group 50	100.0% 10 100.0% 100 100.0%	Chi square=1.778, p value=0.182 no significant
knee12m Total	Y	% \ % \ % \	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP	52.2° 3 30.0° 50 50.0° Group	% 47.8% 7 7 % 70.0% 50 50.0% Group A	100.0% 100.0% 100 100.0% Total	Chi square=1.778, p value=0.182 no significant Table -11(b):
knee12m Total	Y	% \ % \ % \	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP of knee7d COUNT	52.2 ⁴ 3 30.0 ⁶ 50 50.0 ⁶ Group 4 45	% 47.8% 7 7 % 70.0% 50 50 % 50.0% Group A 47	100.0% 100 100.0% 100 100.0% Total 92	Chi square=1.778, p value=0.182 no significant Table -11(b):
knee12m Total Cree knee7days	Y y osstabu N	% \ % \ % \ lation (% \	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP Of knee7d COUNT VITHIN GROUP	52.2 3 30.0 50 50 Group 45 48.9%	% 47.8% 7 7 % 70.0% 50 50 % 50.0% Group A 47 47 51.1%	100.0% 10 100.0% 100 100.0% Total 92 100.0%	Chi square=1.778, p value=0.182 no significant Table -11(b): Chi square=0.543, p value=0.461 no
knee12m Total Cro knee7days	Y y psstabu N	% \ % \ % \ lation (% \	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP Of knee7d COUNT VITHIN GROUP COUNT	52.2 3 30.0 50 50.0 Group 2 45 48.9% 5	% 47.8% 7 7 % 70.0% 50 50 % 50.0% Group A 47 47 51.1% 3	100.0% 10 100.0% 100 100.0% Total 92 100.0% 8	Chi square=1.778, p value=0.182 no significant Table -11(b): Chi square=0.543, p value=0.461 no significant
knee12m Total Cro knee7days	Y Sosstabu N Y	% V % V lation (% V % V	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP Of knee7d COUNT VITHIN GROUP COUNT	52.2 3 30.0 500 50.0 Group A 45 48.9% 5 62.5%	% 47.8% 7 7 % 70.0% 50 50 % 50.0% Group A 47 51.1% 3 37.5%	100.0% 10 100.0% 100 100.0% Total 92 100.0% 8 100.0%	Chi square=1.778, p value=0.182 no significant Table -11(b): Chi square=0.543, p value=0.461 no significant
knee12m Total Cro knee7days	Y Posstabu N Y	% \ % \ lation (% V % V	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP Of knee7d COUNT VITHIN GROUP COUNT VITHIN GROUP COUNT	52.2 3 30.0 500 50.0 Group A 45 48.9% 5 62.5% 50	% 47.8% 7 7 % 70.0% 50 50.0% Group A 47 51.1% 3 37.5% 50 50	100.0% 10 100.0% 100 100.0% Total 92 100.0% 8 100.0% 100.0% 100.0%	Chi square=1.778, p value=0.182 no significant Table -11(b): Chi square=0.543, p value=0.461 no significant
knee12m Total Cro knee7days	Y Y Dosstabu N Y	% V % V % V % V	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP Of knee7d COUNT VITHIN GROUP COUNT VITHIN GROUP COUNT VITHIN GROUP	52.2° 3 30.0° 50 50.0° Group A 45 48.9% 5 62.5% 50 50.0%	% 47.8% 7 7 % 70.0% 50 50.0% Group A A Group B 47 51.1% 3 37.5% 50 50.0%	100.0% 10 100.0% 100 100.0% Total 92 100.0% 8 100.0% 100 100.0% 100.0%	Chi square=1.778, p value=0.182 no significant Table -11(b): Chi square=0.543, p value=0.461 no significant
knee12m Total Cro knee7days	Y Sosstabu N Y	% V % V % V % V	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP Of knee7d COUNT VITHIN GROUP COUNT VITHIN GROUP COUNT VITHIN GROUP	52.2' 3 30.0' 50 50.0' Group A 45 48.9% 5 62.5% 50 50.0%	% 47.8% 7 7 % 70.0% 50 50 % 50.0% Group A A Group B 47 51.1% 3 37.5% 50 50.0%	100.0% 10 100.0% 100 100.0% Total 92 100.0% 8 100.0% 100 100.0%	Chi square=1.778, p value=0.182 no significant Table -11(b): Chi square=0.543, p value=0.461 no significant
knee12m Total Cro knee7days Total	Y Posstabu N Y	% V % V lation (% V % V	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP Of knee7d COUNT VITHIN GROUP COUNT VITHIN GROUP COUNT VITHIN GROUP	52.2 3 30.0 50 50.0 Group A 45 48.9% 5 62.5% 50 50.0%	% 47.8% 7 7 % 70.0% 50 50 % 50.0% Group A 47 51.1% 3 37.5% 50 50.0% Group Group	100.0% 10 100.0% 100 100.0% Total 92 100.0% 8 100.0% 100 100.0%	Chi square=1.778, p value=0.182 no significant Table -11(b): Chi square=0.543, p value=0.461 no significant Table -11(c):
knee12m Total Cro knee7days Total	Y Posstabu N Y I	% V % V % V % V	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP Of knee7d COUNT VITHIN GROUP COUNT VITHIN GROUP COUNT VITHIN GROUP	52.2 3 30.0 50 50.0 Group J 45 48.9% 5 62.5% 50 50.0% Group J 62.5% 50 50.0%	% 47.8% 7 7 % 70.0% 50 50 % 50.0% Group A A Group B 47 51.1% 3 37.5% 50 50.0% Group A Group A	100.0% 100.0% 100 100.0% Total 92 100.0% 8 100.0% 100 00.0% 8 100.0% B Total	Chi square=1.778, p value=0.182 no significant Table -11(b): Chi square=0.543, p value=0.461 no significant Table -11(c):
knee12m Total Cro knee7days Total	Y Posstabu N Y I Posstabu ee	% V % V % V % V % V % V	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP Of knee7d COUNT VITHIN GROUP COUNT VITHIN GROUP COUNT VITHIN GROUP COUNT VITHIN GROUP	52.2' 3 30.0' 50 50 60 62.5% 50 62.5% 50 62.5% 50 62.4% 62.5% 50 50 50 50 50 50 50 50 50 60 60 61 62 <	% 47.8% 7 7 % 70.0% 50 50.0% Group 47 47 51.1% 3 37.5% 50 50.0% Group 47 47 51.1% 3 37.5% 50 50.0% Group 48	100.0% 100.0% 100 100.0% 100.0% 92 100.0% 8 100.0% 100.0% 8 100.0% 100.0% 92 100.0% 92 100.0% 93 100.0% 94 97	Chi square=1.778, p value=0.182 no significant Table -11(b): Chi square=0.543, p value=0.461 no significant Table -11(c): Chi square=0.344, p value=0.558 n
knee12m Total Cro knee7days Total	Y Y N Y I osstabu ee ment	% V % V % V % V % V	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP Of knee7d COUNT VITHIN GROUP COUNT VITHIN GROUP COUNT VITHIN GROUP Of kneeFI12m COUNT VITHIN GROUP	52.2' 3 30.0' 50 50 50.0' Group A 48.9% 5 62.5% 50 50.0% Group A 000 000 000 000 50	% 47.8% 7 7 % 70.0% 50 50 % 50.0% Group 47 47 51.1% 3 37.5% 50 50.0% Group B 47 51.1% 3 37.5% 50 50 50.0% Group 48 49 48 5% 49.5%	100.0% 100.0% 100 100.0% 100.0% Total 92 100.0% 8 100.0% 100 100.0% B Total 97 100.0%	Chi square=1.778, p value=0.182 no significant Table -11(b): Chi square=0.543, p value=0.461 no significant Table -11(c): Chi square=0.344, p value=0.558 n significant
knee12m Total Cro knee7days Total	Y Posstabu N Y I osstabu ee ment	% V % V % V % V % V % V	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP Of knee7d COUNT VITHIN GROUP COUNT VITHIN GROUP COUNT VITHIN GROUP OF kneeFI12m COUNT % WITHIN GROU	52.2' 3 30.0' 50 50 50 60 62.5% 50 50.0% Group A 48.9% 5 62.5% 50 50.0% Group A 000 000 000 000 000	% 47.8% 7 7 % 70.0% 50 50 % 50.0% Group A A Group B 47 51.1% 3 37.5% 50 50.0% Group up A Group 48 5% 49.5% 1 2	100.0% 100.0% 100 100.0% 100.0% Total 92 100.0% 8 100.0% 100 100.0% B Total 97 100.0% 3	Chi square=1.778, p value=0.182 no significant Table -11(b): Chi square=0.543, p value=0.461 no significant Table -11(c): Chi square=0.344, p value=0.558 no significant
knee12m Total Cro knee7days Total	Y Posstabu N Y I Posstabu ee ment	% V % V lation (% V % V % V % V	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP Of knee7d COUNT VITHIN GROUP COUNT VITHIN GROUP COUNT VITHIN GROUP OF kneeFI12m COUNT % WITHIN GROU % WITHIN GROUP	52.2 3 30.0 50 50.0 Group A 45 48.9% 55 62.5% 50 50.0% Group A 00% 50 50.0% 50 50.0% 50 50.0% 50 50 50 50 50 50 50 50 50 50	% 47.8% 7 7 % 70.0% 50 50 % 50.0% Group A A Group B 47 51.1% 3 37.5% 50 50.0% Group up A Group 48 5% 49.5% 1 2 3% 66.7%	100.0% 100.0% 100 100.0% 100.0% Total 92 100.0% 8 100.0% 100 100.0% B Total 97 100.0% 3 100.0%	Chi square=1.778, p value=0.182 no significant Table -11(b): Chi square=0.543, p value=0.461 no significant Table -11(c): Chi square=0.344, p value=0.558 n significant
knee12m Total Cro knee7days Total Cro Kno Impair	Y Posstabu N Y I Posstabu ee ment	% V % V lation (% V % V % V % V	VITHIN GROUP COUNT WITHIN GROUP COUNT WITHIN GROUP Of knee7d COUNT VITHIN GROUP COUNT VITHIN GROUP COUNT VITHIN GROUP OF kneeFI12m COUNT % WITHIN GROU % WITHIN GROUP	52.2' 3 30.0' 50 50 50.0' Group J 45 48.9% 5 62.5% 50 50.0% Group J Group J 00P 50 0UP 50 0UP 33 55	% 47.8% 7 7 % 70.0% 50 50 % 50.0% Group A A Group B 47 51.1% 3 37.5% 50 50 50 50.0% Group up A Group 1 49 48 5% 49.5% 1 2 3% 66.7% 60 50	100.0% 100.0% 100 100.0% 100.0% 701 100.0% 8 100.0% 100 100.0% 8 100.0% 8 100.0% 8 100.0% 8 100.0% 3 100.0% 3 100.0%	Chi square=1.778, p value=0.182 no significant Table -11(b): Chi square=0.543, p value=0.461 no significant Table -11(c): Chi square=0.344, p value=0.558 no significant

		Group			
Crosstabulation of ankle/feet12m			Group A	Group B	Total
ankla12m	Ν	COUNT	42	41	83
alikie12111		% WITHIN GROUP	50.6%	49.4%	100.0%
	Y	COUNT	8	9	17
		% WITHIN GROUP	47.1%	52.9%	100.0%
Total		COUNT	50	50	100
		% WITHIN GROUP	50.0%	50.0%	100.0%

Table -12(a):

Chi square=0.071, p value=0.790 not significant

		Group			
Crossta	bulat	ion of ankle/feet7d	Group A	Group B	Total
ankle7days	Ν	COUNT	44	45	89
		% WITHIN GROUP	49.4%	50.6%	100.0%
	Y	COUNT	6	5	11
		% WITHIN GROUP	54.5%	45.5%	100.0%
Total		COUNT	50	50	100
		% WITHIN GROUP	50.0%	50.0%	100.0%
			Group		
Crosstabula	tion o	f ankle/feetFI12m	Group Group A	Group B	Total
Crosstabula Ankle	tion o N	f ankle/feetFI12m COUNT	Group Group A 46	Group B 50	Total 96
Crosstabula Ankle Impairment	tion o N	f ankle/feetFI12m COUNT % WITHIN GROUP	Group Group A 46 47.9%	Group B 50 52.1%	Total 96 100.0%
Crosstabula Ankle Impairment	tion o N Y	f ankle/feetFI12m COUNT % WITHIN GROUP COUNT	Group Group A 46 47.9% 4	Group B 50 52.1% 0	Total 96 100.0% 4
Crosstabula Ankle Impairment	tion o N Y	f ankle/feetFI12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP	Group Group A 46 47.9% 4 100.0%	Group B 50 52.1% 0 0.0%	Total 96 100.0% 4 100.0%
Crosstabula Ankle Impairment Total	tion o N Y	f ankle/feetFI12m COUNT % WITHIN GROUP COUNT % WITHIN GROUP COUNT	Group Group A 46 47.9% 4 100.0% 50	Group B 50 52.1% 0 0.0% 50	Total 96 100.0% 4 100.0% 100

DISCUSSION

Statistical analysis was done by using chi square test. The chi square test is used to find the association between the attributes. Among the two groups that is group A and group B the chi square is significant if the p value is less than 0.05. Table -1: The mean and standard deviation of age is Group A is 27.28 ± 2.763 and that of in group B is 28.3 ± 3.227 .

Table-2: The number of males in group A (telecommuters) is 50 and the number of males in group B.

Table -3: The mean and standard deviation of job duration is 10.54 ± 0.676 in group A and 8.6 ± 0.670 in group B.

Interpretation: Table 4 (b) At 5% level of significance the calculated chi square value is 16.327 and p-value is 0.000. Since, p-value is lesser than 0.05 there is significant impact of MSD on neck 7 days and the groups.

Table 5 (b) At 5% level of significance the calculated chi square value is 7.862 and p-value is 0.005. Since, p-value is lesser than 0.05 there is significant impact of MSD on shoulder 7 days and the groups.

Table 6 (b) At 5% level of significance the calculated chi square value is 5.983 and p-value is 0.014. Since, p-value is lesser than 0.05 there is significant impact of MSD on elbow 7 days and the groups.

Table 7 (a) At 5% level of significance the calculated chi square value is 4.574 and p-value is 0.032. Since, p-value is lesser than 0.05 there is significant impact of MSD on wrist/hand 12 months and the groups.

Table 8 (b) At 5% level of significance the calculated chi square value is 7.862 and p-value is 0.005. Since, p-value is lesser than 0.05 there is

Table -12(b): Chi square=0.102, p value=0.749

not significant

Table -12(c): Chi square=4.167, p value=0.041 not significant

significant impact of MSD on upper-back 7 days and the groups.

Table 9 (b) At 5% level of significance the calculated chi square value is 23.377 and p-value is 0.000. Since, p-value is lesser than 0.05 there is significant impact of MSD on lower-back 7 days and the groups.

Table 10 (b) At 5% level of significance the calculated chi square value is 8.577 and p-value is 0.003. Since, p-value is lesser than 0.05 there is significant impact of MSD on hip/thigh/buttocks 7 days and the groups.

From the above interpretations we can say that the respondents were affected by MSD's in one or more body regions. In response to the COVID-19 pandemic, many countries have adopted a broad spectrum of containment measures, from recommendations to stay at home to quarantines of large geographic regions. More than 3.4 billion people in 84 countries have been confined to their homes, as estimated in late March 2020, which potentially translates to many millions of workers temporarily exposed to telecommuting. The sudden shift to teleworking could not have been anticipated by workers or employers, so the safety of the home working environment has not necessarily been ensured. However, for many the uptake of telework will be temporary, so a limited duration of exposure may mitigate risks of injury or pain associated with the home environment, or risks of musculoskeletal disorders associated with [10] unergonomic workstations. Therefore, awareness of proper movement analysis according to ergonomics should be educated and measures to provide an ergonomic workstation to avoid MSD's among telecommuters to indicate opportunities for prevention.^[1]

CONCLUSION

There is a significant difference between different category of neck, shoulder, elbow, wrist/hand, upper-back, lower-back, h/t/b pain and the groups so we can conclude from the results that telecommuters are prone to multiple MSD's due

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to COVID-19 pandemic situation that has forced them to WFH with no proper ergonomic facilities provided at home environment. Therefore, proper counselling, postural correction, and awareness sessions should be conducted on ergonomics to maintain and prevent the MSD' s among IT professional telecommuters and office goers.

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