A Cross-Sectional Study on Software Employees to Explore Telecommuting and It's Effect on Their Health in South India

Prema Pujar[1], Gulappa Devagappanavar[1]

[1]Master of Public Health Scholar, School of Environmental Science, Public Health and Sanitation Management, Karnataka State Rural Development and Panchayat Raj University, Gadag, Karnataka, India.

[2]Guest Faculty, School of Environmental Science, Public Health and Sanitation Management Karnataka State Rural Development and Panchayat Raj University, Gadag, Karnataka, India.

Abstract

Background and Objectives: Telecommuting, also called" work from home", is functioning for a corporation but staying at home and communicating with an office by computer and telephone. because of Covid-19, pandemic work from home (WFH) has become an official mandate and a strictly enforced rule since March 2020. This also has affected the mental and physical status of humans. The aim of the study was to determine software employee's attitudes toward telecommuting before and during the Covid-19 pandemic, as well as the effects of extended telecommuting on their health.

Materials and Methods: A cross-sectional online study was conducted among software employees working in IT companies in Bengaluru and Hubli using semi-structured questionnaires. A questionnaire was distributed to 213 employees via email and WhatsApp. A total of 110 responses were considered. The findings were expressed in frequencies and percentages.

Results: The task was found to be 15.6 percent less efficient before and during a pandemic. In terms of the health effects of telecommuting, 47 percent of employees gained weight during pandemics, which may lead to an increase in the incidence of Noncommunicable diseases in the future. Despite having been telecommuting for a long time, nearly half of the employees (40 percent) were mentally stable.

Conclusion: According to the findings of the study, telecommuting was satisfactory both before and during the pandemic. Telecommuting allowed them to balance their personal and professional lives before and during the pandemic. In terms of health effects, more than half of the employees suffered from both physical and mental illnesses. Employees' habits decrease during lockdown, which is a positive change.

Keywords: Telecommuting; Health effects; COVID-19; Pandemic effects; Telecommuting effects; Employee Attitudes; Corona effects

Introduction

The Conora virus has wreaked havoc on many industries around the world. Corona affects both soft and hard skill workers for a variety of reasons. New technological advancements have significantly increased the efficiency of previously time-consuming tasks, allowing people to complete more work in less time. However, for all of technology's advantages, it also has drawbacks. Telecommuting is one example of a current issue. Because of the pandemic, working from home (WFH) has become an official mandate and a strictly enforced rule.This research is carried out to look at the attitudes of information technology workers before and during the corona pandemic. To what extent do telecommuting and extended telecommuting have an impact on employee health.

The Industrial Revolution was revolutionary, according to Organizational Behaviour and Human Relations. Since then, technology innovation has accelerated dramatically, and it now plays a significant part in everyday life. It has altered the face of modern civilisation and the way it is organized1&2.

According to World Health Organization and the Centers for Disease Control and Prevention (CDC), the covid 19 pandemic has transformed the way people work. Burnout can occur as a

result of the pandemic's overwhelming fear and anxiety, as well as occupational stress. When employment expectations exceed the control offered by the job or an individual's ability to deal with those demands, their mental health deteriorates, and the chance of mortality increases." Covid-19 may be contributing to an increase in mental health problems. Because there are less physical exercise, more stress, and no set working hours, telecommuting is likely to raise the burden of Non-communicable disease3.

According to WHO and ILO, telework and lengthy working hours can raise the fatality risk from IHD and stroke. According to the latest WHO and ILO figures, this resulted in 745000 fatalities from stroke and IHD in 2016, a 29 per cent rise since 2000. In addition, working in a stressful environment can produce fear and headaches and sleeplessness, hypertension, a weaker immune system, anxiety, and depression. On the other hand, telecommuting has several advantages, including increased career prospects for disabled people and reduced travel costs and time for employees. They can also spend quality time with their loved ones.4&5

According to a cross-sectional study conducted in Indonesia (2021), the majority of the employees reported various disadvantages such as lack of engagement with colleagues and supervisors, feeling isolated, lower pay, potential burnout (health problems), and home distractions6.

The main objective of study was to determine software employees attitudes toward telecommuting before and during the Covid-19 pandemic, as well as the effects of extended telecommuting on their health.

Material and Methods

Study area: An organizational-based online study was conducted on information technology employees in Bengaluru and Hubli from April 2020 to March 2021.

Study design: An online cross-sectional study was conducted.

Study setting: Using semi-structured questionnaires, a cross-sectional online study is done among software employees working in IT organisations in Bengaluru and Hubli.

Participants: During the Covid-19 outbreak, software employee's those who did work from home.

Variables: The questionnaire is divided into four sections: the first section covers employee socio-demographic information, the second and third sections cover employee attitudes toward telecommuting before and after the Covid-19 pandemic, and the fourth section covers the health effects of extended telecommuting during the Covid-19 pandemic.

Data sources: Data was gathered via primary sources. Employees received the questionnaire over Email and WhatsApp.

Sampling technique: The data was collected using a convenient sampling strategy. The questionnaires were sent to 213 employees, and 113 responded, with three of them being incomplete. Therefore, the study included 110 replies after excluding them.

Statistical analysis: The percentage and frequencies are being used to express the result.

Ethical Approval: Ethical clearance was obtained from KSRDPRU institutional ethics committee.

Results

Results of the survey are categorised under three sections:

1. The attitude of employees regarding telecommuting before the Covid-19 pandemic.
2. Attitudes of employees regarding telecommuting during the pandemic.
3. Health effects of telecommuting on an employee.

Table 1: Socio-demographic details about the employees.

SOCIODEMOGRAPHIC DETAILS	FREQUENCY	PERCENTAGE
GENDER		
Male	56	51%
Female	54	49%
AGE GROUP		
21-30	57	51.8%
31-40	24	26.3%
41-50	18	16.3%
51-60	08	7.2%
61 and above	03	2.7%
EDUCATIONAL STATUS		
B.E Computer Science	64	58.1%
M.Sc Computer science	25	22.7%
B.Sc Computer science	10	9.09%
BCA	03	2.7%
BBA	02	1.8%
M.Tech	02	1.8%
MBA	02	1.8%
BBM	01	0.9%
B Tech	01	0.9%

In table 1, a total of 110 samples were obtained from software employees in the IT industry via an online poll. Males account for 51% of them, while females account for 49%. The majority of employees are between 21 and 30, with 31-40 years accounting for 26.3 per cent of the total, and those over 60 accounting for the least (2.7 per cent). In addition, most of the workers have a bachelor's degree in computer science (58.1 per cent).

Prior to the pandemic, most respondents stated that they were delighted with working from home. In addition, most employees considered that telecommuting would help them stay healthy.

They promote a strong working relationship with their colleagues by keeping them linked. It would also support clients in completing their tasks efficiently, having a solid work-life balance, and boosting their careers. Before the pandemic, telecommuting was believed to be beneficial. (Table 2)

Table 2: Employees' attitudes regarding telecommuting before COVID -19 pandemic.

VARIABLES	STRONGLY AGREE		AGREE		STRONGLY DISAGREE		DISAGREE		NO OPINION	
	F	%	F	%	F	%	F	%	F	%
Overall job Satisfaction	65	59.0%	27	24.5%	04	3.6%	O4	3.6%	10	9.09%
Chance of Promotion	48	43.6%	37	33.6%	13	11.8%	07	6.3%	05	4.5%
Professional Development	57	51.8%	34	30.9%	07	6.3%	07	6.3%	05	4.5%
Efficiency inperforming Task	61	55.4%	37	33.6%	04	3.6%	04	3.6%	04	3.6%
Connectedness with employee	62	56.3%	29	26.3%	07	6.3%	07	6.3%	05	4.5%
Work-lifebalance	54	49.0%	39	35.4%	07	6.3%	08	7.2%	02	1.8%
Relationshipwith Colleagues	62	56.3%	33	30%	04	3.6%	09	8.1%	02	1.8%
Minimise work-related stress and burnout	47	42.7%	32	29%	14	12.7%	10	9.0%	07	6.3%
Concentration during work	58	52.7%	38	34.5%	04	3.6%	08	7.2%	02	1.8%

Participants who were extremely satisfied with telecommuting and accomplishing their work efficiently before the pandemic restricted their focus during the outbreak. More than half of them were comfortable working from home to a certain extent and were capable of maintaining a pretty good balance in their professional and personal life. Only a few people struggled to integrate several modes of communication. Telecommuting is acceptable during a pandemic if all factors are considered. (Table 3)

The accompanying table shows a significant shift in employee attitudes toward telecommuting before and after the pandemic. The strong view regarding telecommuting that existed before the epidemic waned throughout the outbreak, but it is still only satisfactory. There has been a substantial shift in efficiency, ii) work-life balance, and iii) decreasing work-related stress. Before and after the pandemic, job satisfaction was the same. In general, telecommuting is a good idea during a pandemic. (Table 4)

Table 3: Employees' attitudes about telecommuting during extended telecommuting in COVID 19 crisis.

VARIABLES	STRONGLYAGREE		AGREE		STRONGLY DISAGREE		DISAGREE		NO OPINION	
	F	%	F	%	F	%	F	%	F	%
Satisfied with telecommuting	09	8.1%	83	75.4%	04	3.6%	11	10%	03	2.7%
Conflict with family due to telecommuting	04	3.6%	30	27.2%	04	3.6%	66	60%	06	5.4%

Professional conflict due to telecommuting	03	2.7%	24	21.8%	03	2.7%	75	68.1%	05	4.5%
Difficulty in combing differed means of communication	06	5.4%	53	48.1%	04	3.6%	41	37.2%	06	5.4%
Well guided by employee	08	7.2%	80	72.7%	03	2.7%	15	13.6%	04	3.6%
Can do job efficiently	09	8.1%	73	66.3%	04	3.6%	18	16.3%	06	5.4%

Table 4: Comparison regarding telecommuting before and during the pandemic.

VARIABLES	BEFORE PANDEMIC			AFTER PANDEMIC		
	STRONGLY AGREE	AGREE	COMBINED (%)	STRONGLY AGREE	AGREE	COMBINED (%)
Job satisfaction	59%	24.5%	83.5%	8.1%	75.4%	83.5%
Efficiency in performing task	55.4%	33.6%	90%	8.1%	66.3%	74.4%
Association with colleagues	56.3%	26.3%	82.6%	7.2%	72.7%	79.7%
Work-life balance	49%	35.4%	84.4%	2.7%	68.1%	70.8%
Minimise Work related stress	42.7%	29%	81.7%	5.4%	48.1%	53.5%

Changes in the employees' physical and mental state and changes in their habits, if any, in the past and changes in their weight during this pandemic are noted and analysed.

1. **Changes in weight of the employees.**

Weight gain and reduced physical activity are risk factors for NCD, according to the WHO, and telecommuting could be one of the causal factors.

According to the survey, nearly half of the employees gained weight during the pandemic, which could be a risk factor for NCD among the participants. Only a tiny percentage of participants lost weight, but the majority remained the same as before the pandemic. (Fig. 1)

2. **Changes in the habits of the employees are assessed.**

Habits of the employees before and after or during lockdown are assessed to know how lockdown and COVID 19 pandemic affect the habits of participants.

Moreover, half of the staff was habit-free prior to the lockdown. Only a few employees smoked or drank alcohol, and only a handful was tobacco users. (Fig 2)
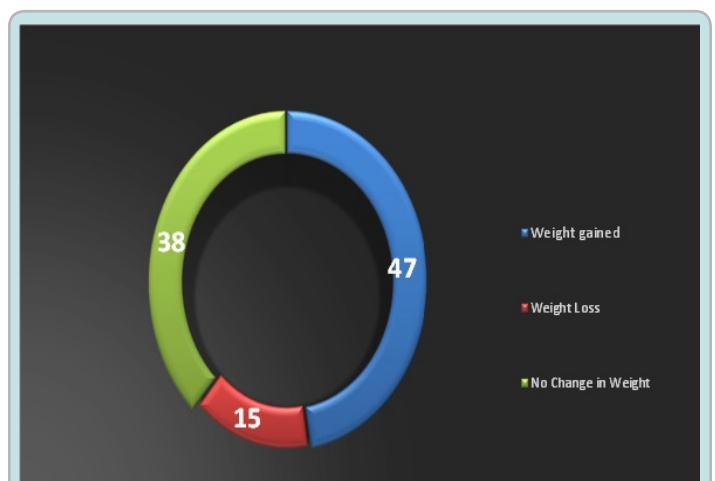

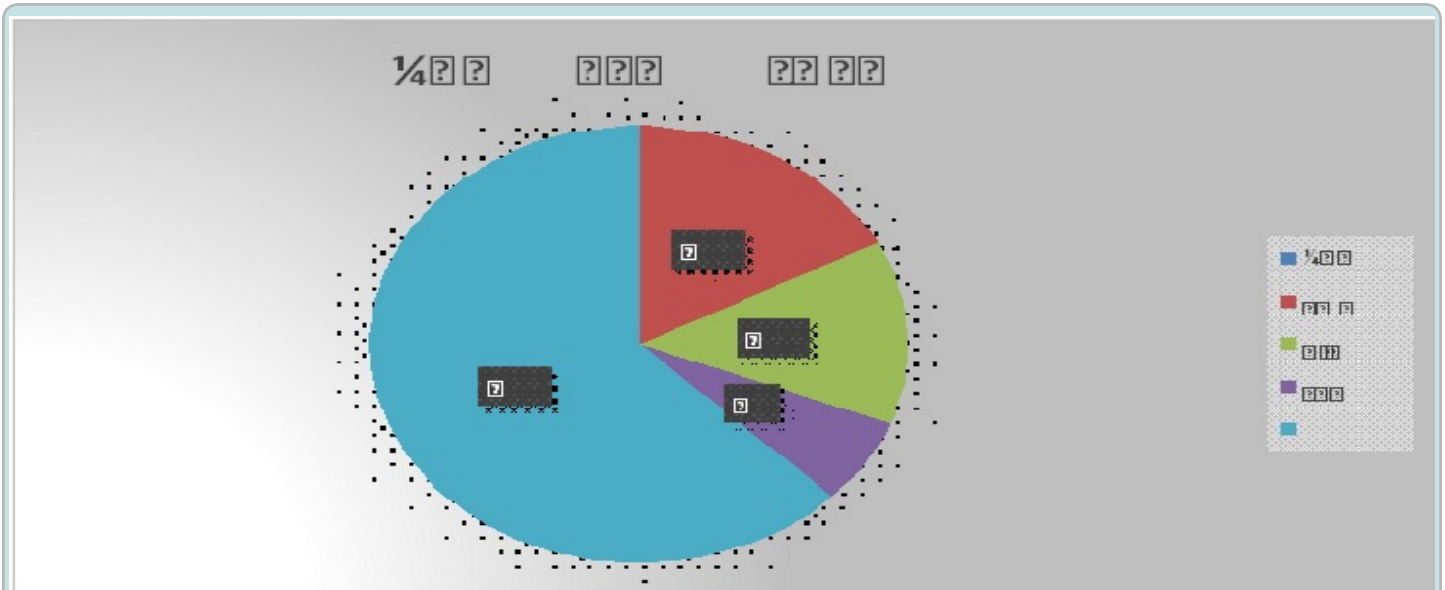**Figure 1:** Changes in participants' weight during COVID 19 pandemic.

Figure 2: Habits among participants before lockdown.

CHANGES IN THE HABITS OF EMPLOYEES DUE TO LOCKDOWN

More than half of the participants were able to limit their smoking, drinking, and tobacco addictions due to the lockdown, which is a positive note for telecommuting. The lack of tobacco and alcohol during the pandemic and the discomfort of drinking and smoking in the presence of family and fear (so-called social pressure) are all plausible factors. (Fig.3)
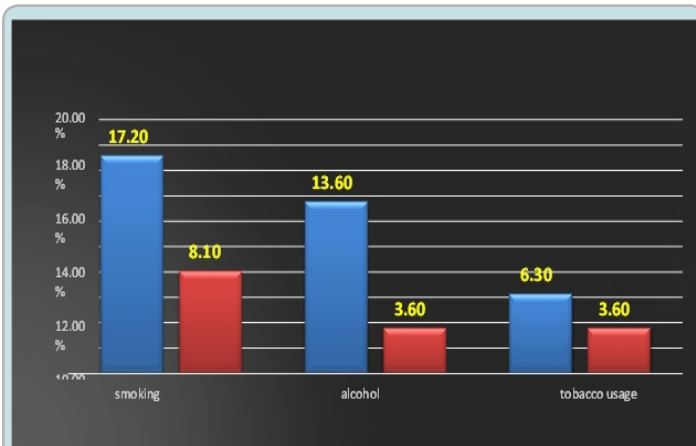

Figure 3: Changes in the participant's habits due to lockdown.

It was determined that approximately half of the employees were mentally stable due to prolonged telecommuting and that more than half of the employees experienced anxiety, despair, or rebellious behaviour. (Fig.4)

The majority of the participants had backaches, a small percentage of them had headaches, and only a few had eye issues, indigestion, or haemorrhoids. (Fig.5)
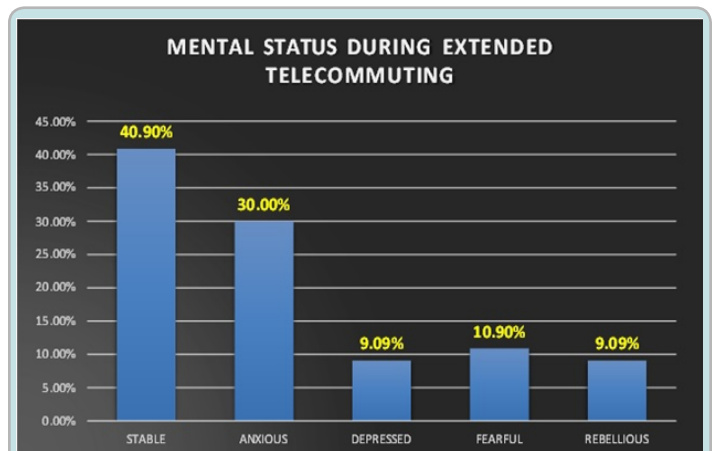

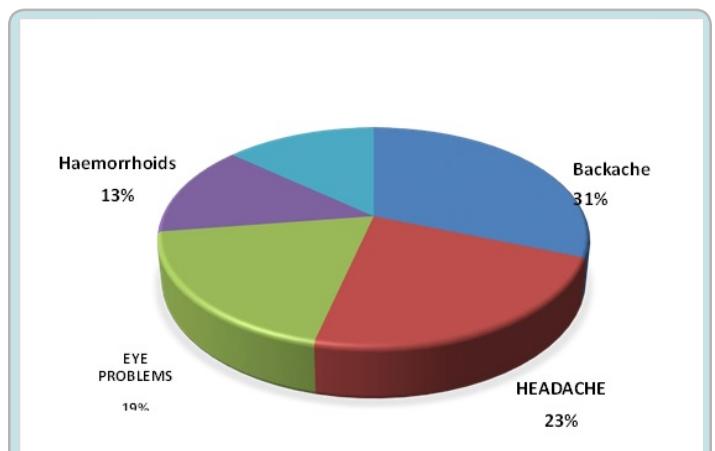**Figure 4:** Mental status of the employees during the extended lockdown.

Figure 5: Employees perceived physical ailments due to extended telecommuting (n-65).

Discussion

Telecommuting is satisfactory before the pandemic, and only to a small extent during the pandemic, according to the survey. Before the epidemic, there was a significant drop in intense satisfaction with telecommuting during the pandemic, while overall satisfaction remained the same.

During Covid-19, Dr Rushina Khan & Dr.Lubna Siddiqui(2020) conducted a study on telecommuting, problems, and challenges and discovered that the majority of respondents strongly approved and were satisfied with telecommuting in the first week. After the second week, they disagreed and were discontent with telecommuting throughout the pandemic, and after fifteen days, they were disagreed and unsatisfied with telecommuting during the pandemic. This was in total contradiction with my findings.7

According to our survey, the majority of employees disagreed that telecommuting caused any form of professional conflict. However, according to a study conducted by Dr Rushina Khan & Dr. Lubna Siddiqui (2020) on telecommuting, problems, and challenges during COVID 19, most respondents strongly agree that they experienced increased irritation levels. In contrast, telecommuting results from the lack of face-to-face meetings, which leads to professional conflict. This contradicts my findings7.

During the COVID 19 crisis, most employees believed that working from home would allow them to do their tasks and finish their jobs more efficiently.

More than half of employees felt that it is difficult to follow a varied work pattern and lack in accomplishing tasks, according to a study conducted by Dr Rushina Khan & Dr. Lubna Siddiqui (2020). on telecommuting, problems and challenges during Covid-19. However, that contradicts my findings 7.

In my research, we have discovered that there had been a significant shift in the strong positive perception of telecommuting in terms of professional development prior to the pandemic. Employees admit that telecommuting aided them in their professional development to a limited amount during the pandemic, but only to a satisfactory level.

The majority of respondents felt that they could spend more time on their objectives and tasks, according to a study conducted by Dr Rushina Khan & Dr. Lubna Siddiqui (2020) on telecommuting, difficulties and obstacles during Covid-19. which is beneficial to their professional growth. This is appropriate for my research 7.

According to the our report, more than half of the employees who took part in the survey were extremely satisfied with their overall job satisfaction due to telecommuting before and during the epidemic. In addition, Dr Rushina Khan & Dr. Lubna Siddiqui (2020) conducted a study on telecommuting, issues, and challenges during Covid-19 and found that most respondents agreed that telecommuting boosted job satisfaction and job description even during the Covid-19 crisis. Again, this is in line with my research 7.

Another study on the impact of extent of telecommuting on job satisfaction, by Timothy D & F, Veiga (2005), found that while telecommuting initially provides job happiness, job satisfaction begins to level off and diminish with higher levels of telecommuting, and essentially plateaus. However, again, this contradicts my findings 8.

More than half of the employees were favourable about their attention during work when working from home before the pandemic, but it levelled off during the pandemic, according to my research. On the other hand, more than half of the respondents felt that their level of focus increased while telecommuting during the Covid -19 crisis, according to a study conducted by Dr Rushina Khan & Dr. Lubna Siddiqui (2020) on telecommuting, issues, and challenges during the Covid-19 crisis. This contradicts my findings 7.

During the pandemic, the majority of employees were to some level happy about their connections with coworkers and the work environment, according to my research.

In a research conducted by Dr Rushina Khan & Dr. Lubna Siddiqui (2020) on telecommuting, problems, and challenges during the COVID 19 crisis, most respondents felt that telecommuting causes them to feel detached from their work, which contradicts my findings7.

According to the survey, more than half of the employees who took part in the survey were highly enthusiastic about the work-life balance achieved through telecommuting during the Covid-19 crisis.

According to Tracey Crosbie and Janne Moore's paper (2004), a new narrative about work-life balance has arisen, replacing family-friendly policies. Working from home allows you to balance work and other obligations. This is in line with my research9.

Telecommuting was found to reduce work-related stress and burnout before the pandemic in my study, with more than half of the employees responding positively. Contrary to my findings, in a 2004 study on work-life balance and telecommuting by Tracey Crosbie & Janne Moore's . found that telecommuting might create stress, which is one of the disadvantages of telecommuting9.

According to my research, extended telecommuting during the Covid-19 crisis caused most employees to have backache, headache, and eye difficulties, with only a handful experiencing indigestion and haemorrhoids.

Telecommuting can create physical diseases such as musculoskeletal difficulties such as static and restrictive posture, repetitive movements, and excessive forearm and wrist position, according to a study published in 2017 by Aida Isbel Travares on Telework and Health Effects. This is in line with my research 10.

Tammy D Allen et al. conducted a study in 2015 to review the scientific findings on telecommuting and found that telecommuting might induce physical problems such as backache and headache, which is a drawback of long-term telecommuting. This is the same as my research 11.

Employees had mental illnesses such as nervousness, rebelliousness, despair, and fearfulness, according to my research. During the Covid-19 crisis, however, the majority of them became mentally unwell due to telecommuting.

Tammy D Allen et al. conducted a study in 2015 to review the scientific data on telecommuting and found that long working hours can induce mental stress. This is precisely what I found in my research 11.

According to a study published in 2017 by Aida Isbel Travares on Telework and Health Effects, long-term telecommuting might create mental stress and burnout. Due to long periods of telecommuting, one of the most common ailments suffered by employees is stress. This is also the same as my research 10.

According to the survey, there are unquestionably suitable modifications in the employees' lifestyles and addictions due to the pandemic. Employees adopted a healthier lifestyle, including improved eating habits and increased physical exercise. Employees also cut down on alcohol, smoking, and cigarettes, which they had before the pandemic.

Tomoshisa Nagata et al. published a study in 2020 titled anticipated health effects and proposed countermeasures following the immediate introduction of telework in response to the spread of Covid- 19: the findings of rapid health impact assessment in Japan, which found that telecommuting has improved employees' lifestyles and assisted them in overcoming substance addictions such as alcohol. Telecommuting has favourably changed employees' lifestyles. This is similar to my research12.

According to my survey, nearly half of the employees gained weight during the pandemic, which could be a risk factor for NCD in the participants. Only a tiny percentage of participants lost weight, but the majority remained the same as before the pandemic.

Weight gain and reduced physical activity are risk factors for NCD, according to the WHO, and telecommuting could be one of the causal factors.

According to the article Excessive weight gain, long working hours, intrusion into weekends and holidays: remote working has side effects, published in The Economics Times on June 24, 2020 by Lijje Philip et al. another side effect of telecommuting is weight gain from eating junk food more frequently and having a wide variety of foods available at home while working. 13

This study implies that we should know a lot about the attitudes and health problems of software employees before and during a pandemic, which could help corporate companies to take the necessary precautions about their workers.

One of the major limitations of this study is the low response rate among employees to our questionnaire, which could be attributed to employee workload.

Conclusion

Telecommuting is satisfactory before and during a pandemic, according to the survey results. Before and during the pandemic, they used telecommuting to keep their personal and professional lives in harmony. More than half of the employees had both physical and mental illnesses, and nearly half of the employees gained weight due to the pandemic. Employees' habits decrease during a pandemic, which is a positive shift.

This study investigated the attitudes of software company employees toward working from home, as well as their attitudes toward telecommuting and extended telecommuting. In addition, this study provides insights into future disease occurrences, particularly noncommunicable diseases, which may be useful for further proper health investigations and future course of action.

References:

1. Olivier Boiral , Marie-Christine Brotherton , Léo Rivaud and Laurence Guillaumie, Organizations' Management of the COVID-19 Pandemic: A Scoping Review of Business Articles; Sustainability 2021, 13, 3993.Page-2-20 https://doi.org/10.3390/su13073993

2. John Nkeobuna Nnah Ugoani, Organizational Behaviour and its Effect on Corporate Effectiveness; International Journal of Economics and Financial Research; Vol. 6, Issue. 6, pp: 121-129, 2020; https://doi.org/ 10.32861/ijefr.66.121.129

3. Getting your workplace ready for covid-19;World Health Organization;3 March 2020;1-8 https://www.who.int/docs/default-source/coronaviruse/getting-workplace-ready-for-covid-19.pdf

4. Healthy and safe telework-Technical brief; World Health Organization Geneva-2021; pp1-22, https://www.who.int/news/item/02-02-2022-crucial-changes-needed-to-protect-workers-health-while-teleworking

5. Challenges and Opportunities of Teleworking for Workers and Employers in the ICTS and Financial Services Sectors; 2016;pp1-32 International Labour Organization, https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/publication/wcms_531111.pdf

6. Susanti Saragih, Santy Setiawan, Teddy Markus, Peter Rhian , Benefits and Challenges of Telework During The Covid-19 Pandemic, International Research Journal of Business Studies | vol. XIV no. 02 (August - November 2021)Page 129-135 https://doi.org/10.21632/irjbs.14.2.129-135

7. Dr.Khan Rushina , Dr. Lubna Siddiqui, Telecommuting: The problems & challenges during covid-19(2020).Int Jeng Res. V9(07):1027-33.

8. Golden T D, Veiga J F, The impact of extent of telecommuting on job satisfaction: Resolving Inconsistent findings. J manage.2005;31(2):301-18.

9. Crosbie T, Moore J .Work-life balance and working from home. Soc Policy Soc. 2004;3(3):223-33

10. Tavares AI, Telework and Health effects review. Int J Healthc.2017;3(2)30-36 https://www.sciedupress.com/journal/index.php/ijh/article/view/11308/7293

11. Allen TD, Golden TD, Shockley KM. How effective is telecommuting ? Assessing the status of our scientific findings. Psychol Sci Public Interes. 2015;16(2):40-68

12. Nagata T,Ito D,Nagata M, Fujimoto A. Anticipated Health effects and Proposed countermeasures following the immediate introduction of telework in response to spread of covid-19: The findings of a rapid health impact assessment in Japan. J Occup Health 2021;Jan-Dec; 63(1) e12198. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7851629/

13. Lijee Philip, Sreeradha D Basu & ET Bureau Excessive weight gain, longer work hours, intrusion into weekends & holidays: Remote working comes with side-effects. 2020;24-June

14. https://economictimes.indiatimes.com/magazines/panache/excessive-weight-gain-longer-work-hours-intrusion-into-weekends-holidays-remote-working-comes-with-side-effects/articleshow/76543675.cms?from=mdr