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Research Article

Changes in Physical Activity and Lifestyle during COVID-19 Pandemic among Software Employees in Chennai, Tamil Nadu

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A B S T R A C T

Background & Aim: The unexpected COVID-19 pandemic and the associated nationwide lockdown have had a huge impact on the physical activity and lifestyle of software employees. So, this study was conducted to explore the relationship between the changes in their lifestyle and the pandemic.

Material and Method: A community-based cross-sectional study was conducted among software professionals using an online platform. They were asked about the changes they experienced in their physical activity and lifestyle before and after the COVID-19 pandemic. A pre-designed questionnaire was used for data collection. All candidates from the selected software companies around the Sholinganallur area were assessed. The sample size achieved was 150.

Results: Among the 150 participants, 48% were female and 52% were male. 18% were single and 82% were married. Only 38% of the subjects were going to the office for work, rest all were working from home. Before the pandemic, 43.5% of people were doing regular physical activity, that too only during weekends, but during these lockdowns, it increased to 56.5% equally during weekdays and weekends. Physical activity increased during the COVID-19 pandemic as compared to the pre-COVID-19 period.

Conclusion: The percentage of software employees doing physical activities was found to have increased during lockdowns as compared to the pre-COVID-19 period. Before the pandemic, majority of the subjects used to do physical activities during weekends only, but during the lockdown, the subjects had shown weekday workouts.

Keywords: Software Employees, Chennai, Food, Physical Activity, COVID-19

Introduction

The deadly COVID-19 epidemic, caused a complete shutdown of day-to-day activities, in the necessity of space for social distancing, which was essential in order to reduce the transmission rate of the disease. During these lockdown periods, people experienced many changes in their physical activity as well as lifestyle.[1] People working in Information Technology (IT) sector were prone to a majority of these changes, because of their work-from-home employment option, and also due to the sudden decrease in social interaction. In order to interpret the merits and demerits due to these changes among them, the study assessed their lifestyle factors like sleep time, screen time, time spent with their family members and alcoholism etc. before and during the pandemic. Very few such prospective studies are available on COVID-19 pandemic data, which have known factors with solid underlying associations of observance to physical activity, such as features of the individual and their day-to-day habits, facility for activities, and type of the exercises itself.

Proper fitness actions along with daily living is one of the most active ways of preventing various non-communicable diseases. Lack of physical activity is a changeable risk factor for heart and vascular diseases and a variety of other chronic illnesses.[2]

The World Health Organization (WHO) endorses at least 90 min of moderate physical activity, 60 min of dynamic activity, or a mixture of the two, per week. Individuals who are physically inactive have a chance of 20% to 30% increased risk of cardiac diseases and mortality compared to people who are physically active.[3]

By implementing various extra activities like excess calorie-burning exercises, walking, jogging, cross fit, yoga etc., we can eliminate Sedentary Behaviour (SB), because sedentary behaviour is related to increased morbidity and cardiovascular risk factors.[4]

This study focussed majorly on the physical activity status of participants, where a comparison was done between the pre-pandemic and COVID-19 pandemic periods. Several studies have shown no changes in physical activity among illiterate and low socio-economic groups. During the pandemic, all the people were requested to stay back inside their homes to avoid frequent exposure to infection, by the state and central government authorities. Due to the nationwide lockdowns during these pandemic situations, there were many restrictions on travel and access to gyms, parks and other places where an individual can perform their bodily activities.[5]

Material and Methods

This study was a community-based cross-sectional study among software professionals conducted in the sub-urban areas of Chengalpattu district, Tamil Nadu. The study was carried out from June to November 2021 which paralleled the time period just after the termination of the phase 2 wave of COVID-19 in Tamil Nadu. The partakers were communicated using proficient clusters destined only for software system employees. The study questionnaire was developed on Google Forms and comprised three segments. The first section collected socio-demographic material, the second section collected material about their physical and lifestyle activities before the pandemic period, and the third section collected the same information during the COVID-19 lockdown period. Data were collected using a Google Forms link, which was sent to all software professionals. Simple random sampling technique was used for the selection of study samples. All the candidates from selected software companies around the Sholinganallur area were assessed. The sample size achieved was 150. Ethical committee approval was obtained from the Institutional Human Ethics Committee, before the start of the study. Software employees who were willing to participate were informed regarding the purpose of the study, benefits, procedure and confidentiality of the research study, and informed consent was obtained from them. After data collection, statistical analysis was done using SPSS v21 software.

Results

Among 150 participants, majority (123, 82%) were from the age group of 21-30 years, 24 (16%) were in the 31 - 40 years age group and the rest (3, 2%) were above 40 years. When coming to gender, majority (78, 52%) were male and the rest (72, 48%) were female with an almost equal distribution between both genders. 123 (82%) were married and the rest (27, 18%) were single (Table 1).

Table 1.Distribution of Participants according to Age Group and Gender (N = 150)

Category	Frequency (N)	Percentage (%)
Age (in years)		
21-30	123	82
31-40	24	16
> 40	3	2
Total	150	100
Gender		
Male	78	52
Female	72	48
Total	150	100
Marital status		
Single	27	18
Married	123	82
Total	150	100

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Our study showed slight changes in the day-to-day activities between the pre-COVID-19 period and during COVID-19 lockdowns. Sedentary lifestyle holders wanted to engage their time in either indoor or outdoor activities during complete lockdowns. Those who didn't practice any activity before COVID-19 (51, 34%), still remained the same (Table 2). People started engaging their leisure time with physical activity during this lockdown era, apart from the daily routine. Outside food consumption was drastically reduced between these two time periods. On comparing the sleep duration of the participants between pre-COVID and during pandemic, it was found that the sleep duration had increased during the lockdown, especially, for those who were sleeping more than 8 hours per day.

Table 2.Characteristics and Duration of Various Activities during Pre-COVID Time and during COVID Lockdowns (N = 150)

Activities	Pre-Covid N (%)	During Pandemic N (%)
Physical activity duration (hours/week)		
Nil	51 (34.0)	51 (34.0)
1-7	75 (50.0)	66 (44.0)
8-14	21 (14.0)	30 (20.0)
> 14	3 (2.0)	3 (2.0)
Outside food intake		
Seldom	36 (24.0)	78 (52.0)
Often	114 (76.0)	72 (48.0)
Water consumption (litres/day)		
0-3	132 (88.0)	120 (80.0)
> 3	18 (12.0)	30 (20.0)
Sleep duration (hours/day)		
< 7	60 (40.0)	54 (36.0)
7-9	90 (60.0)	69 (46.0)
> 9	0 (0.0)	27 (18.0)
Screen time (hours/day)		
< 4	36 (24.0)	21 (14.0)
4-8	63 (42.0)	56 (37.3)
> 8	51 (34.0)	73 (48.7)

The study explored the time duration and changes in the pattern of activity of the participants. Some changes were noticed in their physical activity in terms of time utilisation, especially sleep duration and screen time, when compared to their other day-to-day activities. Screen usage time increased in response to the work-from-home strategy and online classes for the children (Table 3).

Table 3.Changes in Various Activities between Pre-COVID Time and during lockdown (N = 150)

Activities	Frequency (N)	Percentage (%)
Changes in physical activity		
No change	45	30
Increased	57	38
Decreased	48	32
Consumption of outside food		
No change	72	48
Increased	15	10
Decreased	63	42
Water (drinking) consumption		
No change	96	64
Increased	39	26
Decreased	15	10
Sleep duration		
No change	99	66
Increased	39	26
Decreased	12	8
Meals per day		
No change	117	78
Increased	27	18
Decreased	6	4
Screen time		
No change	70	46.7
Increased	64	42.7
Decreased	16	10.7

Majority of participants showed that their screen time had increased in these lockdown periods when compared to pre - COVID times. They gave various reasons for this change. Maximum (69, 46%) participants responded that most of their screen time was due to work (Table 4). In order to overcome this scenario, they had increased screen time and physical activities which can be performed at their homes.

Table 4.Reasons given by Participants for Change in Screen Time during COVID-19 Pandemic (N = 150)

Reasons for Changes in Screen Time	Frequency (N)	Percentage (%)
Work	69	46
Entertainment	27	18
Learning	6	4
Boredom	30	20
Help children in lessons	6	4

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Others	3	2
None	9	6
Total	150	100

In our study, majority showed an increase in their physical activity, duration of sleep, and screen usage time during the COVID-19 pandemic when compared to the pre-COVID time (Figure 1).

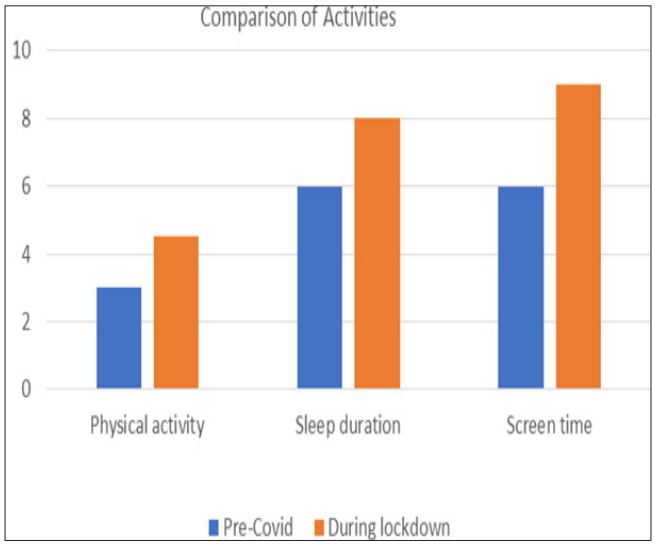

Figure 1.Changes in Various Activities among Study Participants before COVID and during Lockdown (N = 150)

Discussion

In this study, among all the study participants, majority (93, 62%) were in the work-from-home category because of COVID-19 lockdowns. Most software companies were proceeding with this strategy in order to provide a safe work environment. Due to these circumstances, the study showed many changes in the duration and frequency of their physical activity, sleep time, outside food consumption, screen time, and time spent with family members etc. They stated various reasons for these changes like in case of increased screen time, they said that it was helping children in online classes and during boredom, etc.

Whiting et al. have explained that lack of physical activity, in the long run, leads to diabetes mellitus in the younger age group individuals. Hence software employees were more prone to diabetes mellites as they were lacking proper physical activity in their day-to-day life. They were spending most of the time in front of a screen (personal computer or laptop). Thus, during the pandemic, their physical activity and other positive health measures had changed.[6]

Unnikrishnan et al. mentioned in their study that the global pandemic had built a way for software employees to develop their social status as well as physical fitness.[7] It could also help them in preventing various non-communicable diseases. Similarly, it has been explained in our study that increasing the duration of physical activity and other social well-being duration would help them in keeping good physical as well as mental status. Significant improvement was noticed in our study in physical activity in day-to-day life.

From the statistics of the World Health Organization, it can be said that physically active behaviours will prevent illnesses in future like diabetes, hypertension etc., but not only these two, other non-communicable diseases can also be prevented by proper physical activity and food habits in our day-to-day lifestyle.[8] In our study, too many participants responded to recent changes in their physical activity and food habits, which they had experienced during the recent pandemic times. Software employees, due to the work-from-home strategy, had experienced more time for leisure activities, but people who were going to office premises did not show any significant changes.

Ghosh et al. presented that these nationwide lockdowns due to the COVID-19 pandemic had seriously influenced the daily lifestyle pattern of many individuals and economic instability too.[9] In our study too, it was found that majority had increased their physical activity duration, and had reduced their sleep time. Changes in food habits like reduced consumption of outside foods, increased snack consumption, and episodes of meal intake had changed. Not only this, they had commented about weight gain in the last two to three months as many people had adopted work-from-home and had more time for relaxation activities other than routine activities.

Singh et al. observed the various medical issues faced by the people during these lockdowns in order to prevent COVID-19 transmission.[10] In our study, we observed that social relationships among software employees had changed a lot during the pandemic as compared to previous periods. The time duration spent with neighbours and family members had increased for majority of the software employees.

Woods et al. studied changes in day-to-day activities among the general population during these lockdowns and found some changes in physical activity in day-to-day life like cycling, gym workouts, and yoga.[11] In our study, we assessed the changes due to increased time for leisure activities and found that the participants had improved their time duration for various activities like yoga, cross fit, walking, and jogging. But still, it was seen that when compared to previous times, in these nationwide lockdowns, they gained better bonding in social relationships.

Bontrup et al. and Nieman and Wentz found that there were certain changes in food habits and fitness-seeking

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behaviour among people.[12,13] In our study, we noticed that due to these lockdowns, most of the software employees from the suburbs of Chennai got work-from-home. That's why they had more time for other leisure activities like playing games, cooking, creation of YouTube videos and other social media attention. Such kind activities made them mentally stable relieving them from their work stress.

In a study, Chen et al. noted the personal hygiene and fitness activities of people along with the preventive measures taken for protecting themselves from COVID-19 exposure.[14] It is clear in our study that in this pandemic situation, most of the subjects (112, 74.6%) preferred to stay back at home unless any emergency compelled them to get out of their houses, and very few gave a point that longstanding stays in the house during lockdown made them feel a psychological imbalance. Ammar A et al. proceeded with related results for these homestays in food habits and eating behaviour among the general population during the COVID pandemic.[15] We studied the changes that happened in software employees regarding eating habits, number of meal episodes per day, outside food consumption via online orders and how it affected their lifestyle when compared to the pre-COVID era.

Conclusion

Actually, software employees stick to a sedentary lifestyle in general when compared to other professionals. The work-from-home strategy makes them feel highly sedentary in their day-to-day activities when compared to pre-COVID times. Physical activity, spending time with family members, and sleep duration had increased during the COVID-19 lockdowns. In order to overcome the boredom, they had started engaging themselves in various activities which could be carried out in their homes.

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Conflict of Interest: None

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