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Impact of Covid 19 infection on life style related behaviors in tertiary care hospital at Chennai, A Cross sectional study

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ABSTRACT:

INTRODUCTION:

COVID-19 pandemic continues to redefine daily lifestyle-related habits in a significant manner as it progresses through different phases. The stringent lockdown has made significant changes in the lifestyles of the populations. The working pattern, physical activity, eating behavior, sleeping hours, screen timing and digital usage are expected to change. The present study done to find the impact of COVID19 infection in lifestyle modifications of the infected persons.

METHODOLOGY:

This study is a cross-sectional design to assess the impact of COVID-19 infection on life style related behaviors in tertiary care hospital at Chennai,by purposive sampling technique. Data was entered in Microsoft Excel and analyzed using SPSS software version 21.

RESULTS:

Among the 185 study participants, the factors associated with life style changes in post COVID 19 patients were assessed. There was statistical significance between Sociodemographic profile and change in physical activity, sleeping hours and dietary pattern.

CONCLUSION:

The result of the study indicated a improvement in healthy eating behavior and also reduction in physical activity and increase in screen time. Systematic evaluation of these life style behaviors will able to develop a tool to address the needs during this time.

KEY WORDS: PostCorona virus, life style modification, behavior change

INTRODUCTION:

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. It was declared as global pandemic by the World Health Organization (W.H.O) on March 11,2020[1]. Following which, on 24 March 2020, A national curfew was implemented by the Indian Government. It restricted the movement of more than 1.3 billion Indian citizens as a preventive measure to battle the spread of COVID-19 in India[2]. All Government and private institutions like educational centres, locomotive services, industrial installments, religious places of worship and hospitality services were withheld. Due to this curfew that involved physical distancing and self-isolation, a sudden change in the lifestyle patterns of the population was expected.[3]

The two major adverse consequence of the nationwide curfew werereduced accessibility of consumer goods and home quarantine[4]. Additionally, work from home pattern of jobs, translated into an increased mobile screen. which has been associated with a sedentary lifestyle, weight gain, as well as sleep deprivation. Due to social disconnection and decreased professionalism, the regular sleep cycle is expected to significantly improve in the population[5]. People being engaged in regular physical activity has both physical and mental health benefits whichwas affected by restricted movements. Restrictions on locomotives and availabilityof the routinely used consumer goods , had led to reduced consumption of products such as tobacco, liquor and fast food.[6].

So far there is no clue toestimate the effect of COVID-19 on lifestyle-related behaviors in India. It is essential to interrogate some coreareas such as which components of lifestyle behaviors are most affected, severity of impact of COVID-19 on these behaviors, the reasons for these changes and which socio-economic strata is highly affected. The current study was undertaken to assess the impact of COVID-19 on lifestyle-related behaviors.

METHODOLOGY:

STUDY DESIGN, STUDY AREA AND POPULATION

This was a cross sectional study carried out in Chennai, Tamil Nadu during Jan 2022 to April 2022.

SAMPLE SIZE AND SAMPLING TECHNIQUE

The study was done among post covid 19 infected patients in tertiary care hospital at Chennai. The purposive sampling method was adopted to collect the primary data. According toreference article: Anjana RM et al, prevalence of change in physical behavior was 14 percent[7]. Using the formula Z^2pq/e^2, where thevalue of Z is 1.96 for 95% confidence level; percentage of change in physical behavior (p) related to COVID 19 which was 14%, q is 100-p =86 and e is allowable error which is taken as 5% the sample size was calculated to be 185.

INCLUSION AND EXCLUSION CRITERIA

The inclusion criteria are participants living in Chennai who are 18 years and above. They should be post covid patient who was treated in a tertiary care hospital. Participants who are severely affected by complications are excluded from the study.

ETHICAL CLEARANCE:

The study was carried out after obtaining approval from the Institutional Ethical Committee in a private medical college in Chennai

DATA COLLECTION:

The present study is a cross-sectional design to assess the impact of Covid 19 infection on life style related behaviors in a tertiary care hospital. The questionnaire is of two parts – part one consisting of sociodemographic details and part two consisting semi structured questionnaire on physical activity, eating behavior, screen timing, digital usage, sleep pattern and other behaviors. The questionnaire for this study was formulated in such a way that – changes in afore mentioned life style related factors before and after covid 19 infection. This was asked to the participants, thereby the overall impact of the participant after COVID 19 could be assessed. Data was collected through an online platform due to pandemic situations to avoid the spread of infection. An online structured questionnaire was distributed using Google forms, with a consent form added to it. Questionnaire link was sent through WhatsApp, Facebook, email, Instagram, and other media to contact the participant. On receiving and clicking the link, the participants got auto directed to the study's information and informed consent. After accepting to participate in the survey, participants had to fill up the demographic details followed by questionnaire related to impact of COVID-19 on life style related behaviors.

STASTICAL ANALYSIS:

Data was entered in MS Excel and analyzed using SPSS software version 21. Frequencies and Chi Square was used to analyze the data. Results was presented as tables and figures. 95% confidence intervals and P value <0.05 will be considered statistically significant.

RESULTS:

A total of 185 participants were agreed to participate in this study. Majority of the participants were less than 40 years of age (88%). Of the total study participants 109(59%) were females and 76 (41%) were male. Out of 185 participants, sleeping hoursof 45% were more than 6 hours (Table 1). More than $2/3^{rd}$ of participants reported very good quality of sleep. As depicted in the Table 3, gender was significantly associated with the sleeping hours.

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Table: 1. Influence of COVID 19 infection on life style behavior. N =185

Life style related Behaviors	**Before Covid 19 infection Frequency (%)**	**After Covid 19 infection Frequency (%)**
Sleep duration		
< 4 hours	2 (1.1)	0 (0)
4-6 hours	167 (90.3)	1 (0.5)
6 hours	8 (4.3)	100 (54.1)
6-8 hours	8 (4.3)	84 (45.4)
Quality of Sleep		
Excellent	0 (0)	17 (9.2)
Very Good	2 (1.1)	146 (78.9)
Good	182 (98.4)	20 (10.8)
Bad	1 (0.5)	2 (1.1)
Type of work		
Sedentary	20 (10.8)	163 (88.1)
Standing	158 (85.4)	10 (5.4)
Manual work	5 (2.7)	12 (6.5)
Unemployed	2 (1.1)	0 (0)
Participation in the leisure Related activity (walking, gardening)		
Not routinely	5 (2.7)	2 (1.1)
One or two times a week	172 (93)	2 (1.1)
Three to four times a week	4 (2.2)	80 (43.2)
Five to six times a week	1 (0.5)	97 (52.4)
Almost daily	3 (1.6)	4 (2.2)
Participation of 30 minute of moderate intensity aerobic work		
Not routinely	27 (14.6)	23 (12.4)
One or two times a week	155 (83.8)	42 (22.7)
Three to four times a week	3 (1.6)	74 (40)
Five to six times a week	0 (0)	46 (24.9)
Frequency of fruits intake		
Not routinely	58 (31.4)	15 (8.1)
One or two times a week	124 (67)	12 (6.5)
Three to four times a week	1 (0.5)	26 (14.1)
Five to six times a week	2 (1.1)	124 (67)
Almost daily	0 (0)	8 (4.3)
Consumption of milk or its products		
Not routinely	28 (15.1)	0 (0)
One or two times a week	141 (76.2)	21 (11.4)
Three to four times a week	11 (5.9)	118 (63.8)
Five to six times a week	0 (0)	39 (21.1)
Almost daily	5 (2.7)	167 (90.3)
Consumption of junk foods		
Not routinely	93 (50.3)	167 (90.3)
One or two times a week	79 (42.7)	4 (2.2)
Three to four times a week	6 (3.2)	8 (4.3)
Five to six times a week	5 (2.7)	4 (2.2)
Almost daily	2 (1.1)	2 (1.1)

Table 2:Changes adopted due to COVID 19 situation.N=185

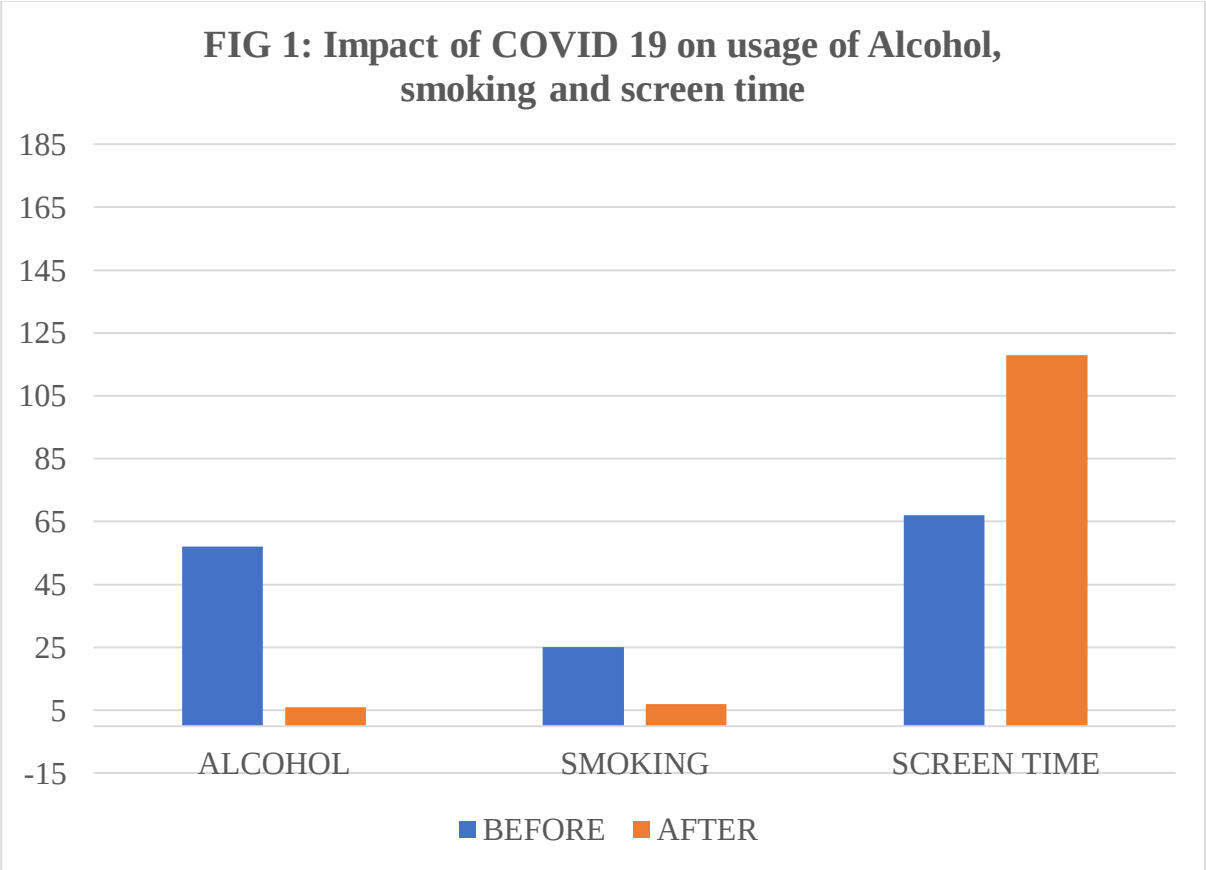
Life style related Behaviors	Before Covid 19 infection Frequency (%)	After Covid 19 infection Frequency (%)
Usage of digital payments		
No	5 (2.7)	2 (1.1)
Occasionally	162 (87.6)	8 (4.3)
Yes, Once a week	12 (6.5)	117 (63.2)
Yes, more than once a week	3 (1.6)	53 (28.6)
Yes, almost every day	3 (1.6)	5 (2.7)
Usage of Online purchase		
No	4 (2.2)	2 (1.1)
Occasionally	165 (89.2)	2 (1.1)
Yes, once a week	13 (7)	115 (62.2)
Yes, more than a week	3 (1.6)	57 (30.8)
Yes, almost every day	0 (0)	9 (4.9)

ASSOCIATION BETWEEN DEMOGRAPHIC DETAILS AND IMPACT OF COVID IN PHYSICAL ACTIVITY, SLEEPING HOURS AND JUNK FOODS

There was statistical significance between changes in physical activity, sleeping pattern and junk food consumption and age, gender, socioeconomic status and type of work. There was increased in physical activity in both the genders after covid infection. Similarly, the upper class in socioeconomic status has increased physical activity in post covid condition. The sleeping hours has increased among all age groups and in both the gender. Particularly the participants doing different type of work i.e., both office goer as well as work at home, in both the cases the sleeping hours has significantly increased. Also, the junk food consumption has drastically reduced in all age groups in post covid (Table 3). Impact of covid on usage of alcohol, smoking and screen time was depicted in the Fig.1

Table 3.Association between demographic details and impact of covid in physical activity, sleeping hours and junk foods

Demographic profile	Physical activity		Sleeping hours		Junk foods	
Age	**Decreased**	**Increased**	**Decreased**	**Increased**	**Decreased**	**Increased**
<40 years	53	110	6	157	105	58
>40 years	6	16	2	20	21	1
P valve	**0.0409**		**0.0343**		**0.001**	
Gender						
Female	39	70	0	109	81	28
Male	20	56	8	68	45	31
P value	**0.015**		**0.001**		**0.023**	
Socio economic status						
Lower class	14	2	2	2	15	1
Upper class	45	124	124	6	111	58
P value	**0.001**		0.145		**0.015**	
Type of work						
Office goer	28	51	8	71	55	24
Work from home	31	75	0	106	71	35
P value	0.231		**0.001**		0.413	



DISCUSSION:

Our study is a web-based study undertaken to describe the impact of covid infection on life style related behaviors and to assess the association with sociodemographic details. This study reports changes in high levels of physical activity, eating behavior and sleeping hours among post covid 19 patients. Among the demographic details there was a statistical significance between type of work, age, socioeconomic status, gender, and changes in life style related behavior.

The findings suggest high levels of (88.1 %) physical activity among sedentary type of workers in post covid condition. When compared with previous study done by Chopra S et al, it reports only14% change in prevalence of physical behavior among Covid 19 patients[8]. Increased awareness and involvement of population in health during second wave of pandemic had led to a rise in physical activity.

Our study shows, the physical activity among the men and women are increased in post covid condition, which is similar to findings in study done by Ranjit M Anjana et al and Salman D et al[7,9]. Although there was an absence of recreational activity due to lock down, the people engagement in physical activity has increased significantly irrespective of their gender and socio-economic status. Also, the participants involvement in leisure (walking, gardening) related activities also increased where 52.4% of the participants do such activities for five to six times in a week. There is no difference in demographic profile concerned with increased physical activity. Similarly, the sleeping hours have increased in post covid 19 in all the participants. The overall sleeping hours in previous

study done by Sakthi Chopra et al was just 25%[10]. The findings revealed increased sleeping hours in almost all the participants in post covid 19 conditions.

Motivating and training in healthy habits have influenced the eating habits of the participants during the post covid period. The participants start intentionally taking dietary supplements like vitamin c, probiotics and other dietary supplements. Our study synchronizes with findings of previous study done by Romero Blanco et al, where the increased intake of fruits, milk and reduced consumption of junk foods were observed in post covid patients[11]. Increased physical activity on one side suggests that those who intend for healthy life style focus on both physical activity and diet.

The study findings on impact of covid 19 in consumption of alcohol and smoking shows positive direction of change in life style related behaviors. There is reduction in alcohol and smoking consumption in post covid condition, which is contrast in findings with earlier study done by Elyse R et al[12]. However similar study done by Zhang J et alcoincides with our study findings in which people who choose to use alcohol and smoking in post covid situation had decreased substantially[13]. This may be due to decreased availability of alcohol.

The strength of the study was that, many life style related behavior variables were assessed. It focused on a generalized sample for collection of data using a pre-validated questionnaire to study the effect of Covid 19 on life style changes. The limitation of the study is due to e-survey online mode and only people with internet access were able to be assessed.

CONCLUSION:

To conclude this study shows a combined effect on changes in life style related behavior with marked positive changes in physical activity, health eating behavior, increased quality of sleeping hours as positive life style changes and significant increase in screen time as negative change. The regular assessment of these life syle behaviors will able to develop appropriate recommendations during this time.

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